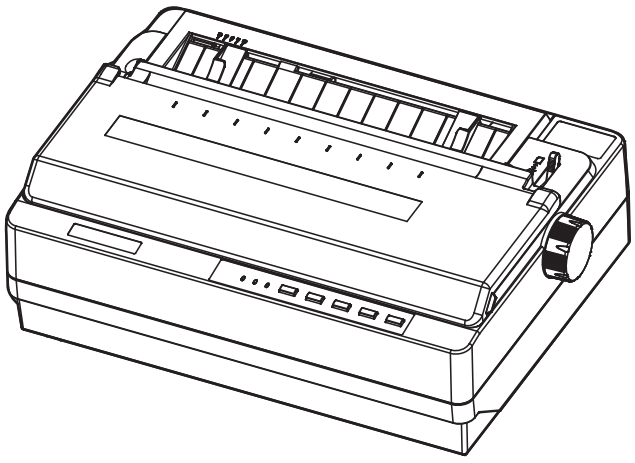
Jolimark

User's Manual

DP350

Dot Matrix Printer



Important Safety Instructions

1. Read all of these instructions carefully and thoroughly and save them for later reference.
2. Follow all warnings and instructions in the manual as well as marked on the product.
3. If the printer has been used just now, please not touch the print head for overheating.
4. Do not put your fingers under the tractor cover of the left and right tractor when install the tractor paper.
5. Unplug this product from the power outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
6. Do not use this product near water.
7. Do not place this product on an unstable cart, stand or table. The product may fall, causing serious damage to you or the product.
8. Slots and openings on the cabinet and the back or bottom are provided for air ventilation. To ensure reliable operation of the product and to protect it from overheating, do not block or cover these openings. The openings should never be blocked by placing the product on a bed, sofa, rug or other similar surface. This product should never be placed near or over a radiator or heater. This product should not be placed in a built-in installation or kiosk stand unless proper ventilation is provided.
9. This product should never be placed near or over a radiator or heat origin, and should avoid of direct sunshine.
10. Do not locate this product where the cord will be walked on. When the cord or the plug is mangled, please stop using and get a new one replaced. Make sure the old one is far away from the printer, so it can avoid someone who does not know the inside story getting damage.
11. Do not use in locations subject to high humidity or dust levels. Excessive humidity and dust may cause equipment damage or fire.
12. Never push objects of any kind into this product though cabinet slots as they may touch dangerous voltage dots or short out parts.
13. Don’t remove the printer’s out-cover and repair the printer. When needed, call or take it to the professional.
14. To ensure safety, please unplug this product prior to leaving it unused for an extended period. The wall outlet you plan to connect to should be nearby and unobstructed.
15. Unplug this product from the power outlet and leave servicing to qualified service personnel under the following conditions:
    A. When the power cord or plug is damaged or frayed.
    B. If liquid has been spilled into the product.
    C. If the product has been exposed to rain or water.
    D. If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since importer adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
    E. If the product has been dropped or the cabinet has been damaged.
    F. If the product exhibits a distinct change in performance, indicating a need for service.

Note: The contents of this manual may be changed without prior notice.

*** All parts of the printer can be recycled. When it is abandoned, we can call it back freely. Please contact us when you abandon it.**

Warnings, Cautions, and Notes

Pay attention to the following promises when using this manual:

Warnings:

Warnings must be followed carefully to avoid bodily injury.

Cautions:

Cautions must be observed to avoid damage to your equipment.

Notes:

Notes contain important information and useful tips on the operation of your printer.

The Guide

First thanks for buying the Jolimark printer. The printer is 24-pin 80-column Dot Matrix Printer, can satisfy multi-function print requests. It can be widely used in tax, mail, telecom, police, hospital, insurance, finance, stock, customhouse, cabaret, aviation and transport etc.

The printer feature introduce as follow:

- **Install print paper easily**

  The install design make you operate easily, install paper rapidly and save your time.

- **Tear off function**

  This causes tractor paper to be automatically fed to the tear-off position at the edge of the window cover, for easy tear-off at the perforations after printing. This zero tear-off capability helps eliminate paper wastage.

- **Facility switch between cut-sheet and tractor paper**

  Feed the tractor paper back to the installing position through **LOAD/EJECT** key on the control panel, pull the paper select lever to the cut-sheet position. Insert the cut-sheet from front to print. If you want to use tractor paper again, pull the paper select lever back to the tractor paper position after cut-sheet printing. Then press **LOAD/EJECT** key, tractor paper may be fed to the printer again.

- **Eject function**

  The function allow the user eject the tractor paper through the facility button on the control panel.

- **Select the data transfer interface function automatically**

  The printer configures with a parallel interface, two USB interfaces, a serial interface and an Ethernet interface (according to specific interface standards). Connect the printer to the computer with the correct cables. The printer will switch the correct interface according to the type of data automatically.

- **Emulation**

  The printer supports the Epson ESC/P-K2 emulation as standard.

- **Enhance Chinese Character Set**

  This printer contains GB18030 Chinese character set and also supports 4 bytes Chinese printing.

- **Break pin compensation function**

  User can set the printer to print using the pin which is in good condition to compensate the break pin.

- **Pin switch in turn function**

  User can set pins to switch while printing form transverse line in order to improve print head life.

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Chapter 1 Preparation

1.1 Unpacking and Checking

Check the following items in the packing box, if any of these items are missing, please contact your dealer.

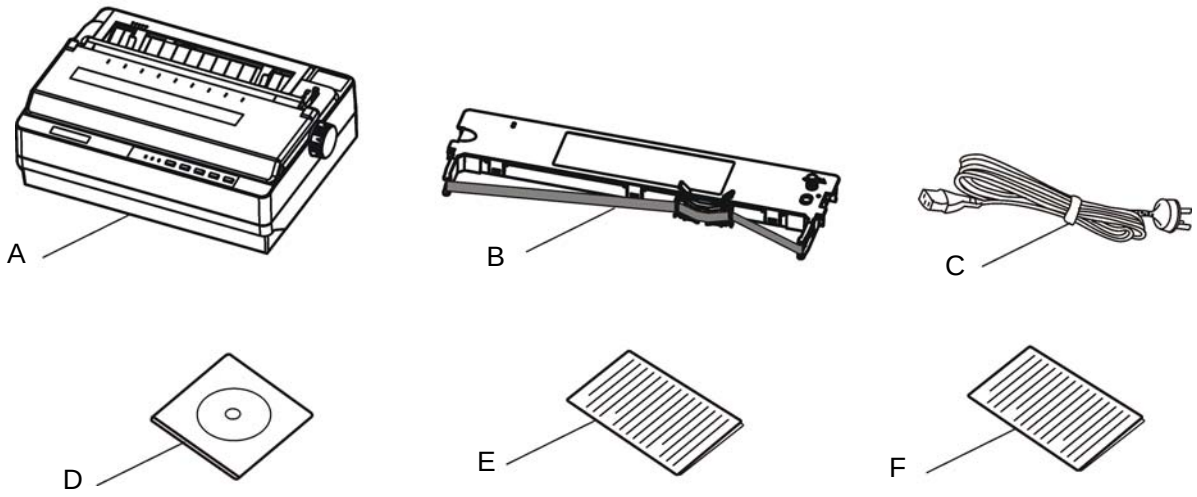


Figure1-1 Unpacking list

A: Printer

B: Ribbon cartridge JMR120

C: Power cord

D: Driver CD (Including *user's manual* and driver)

E: Packing list

F: Facility user's guide

Caution: The fittings please refer the packing list. The packing style above is subject to change without notice.

1.2 Dismantling the Protective Materials

1. Open the packing box, lift up the printer.
2. Save all the original packing materials, so that it can be used when transport the printer.

1.3 Main Parts of the Printer

Figure1-2 and figure1-3 shown are main parts of DP350.

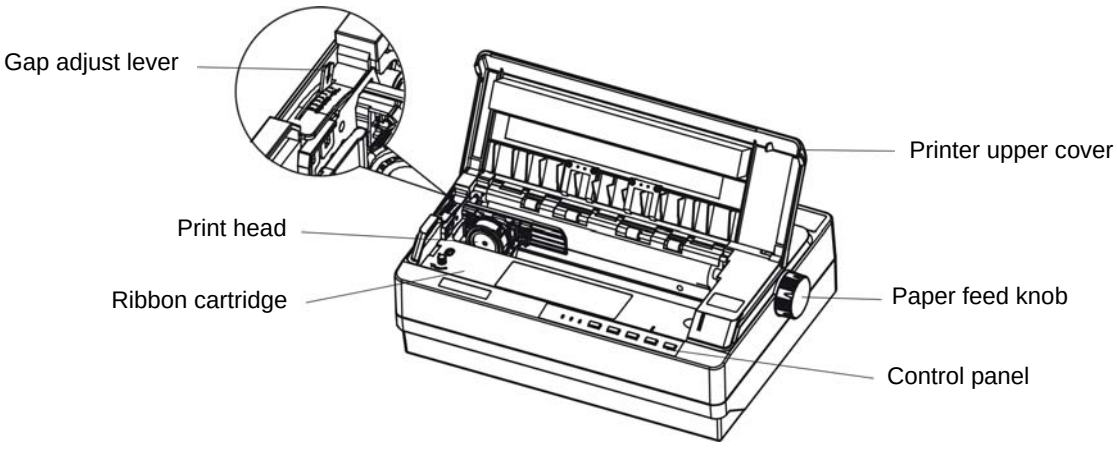
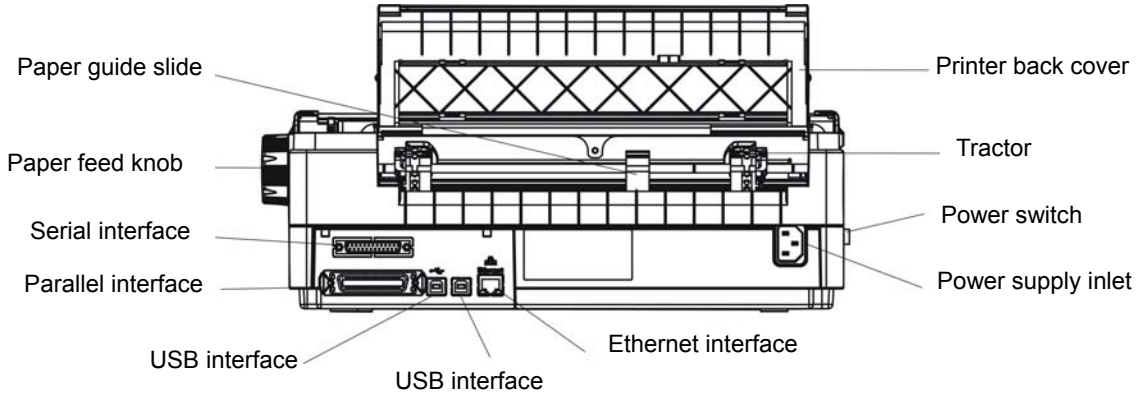


Figure1-2 main parts of the printer (front view)



Figuer 1-3 main parts of the printer (rear view)

★ According to specific interface standards

1.4 Choosing a Place for the Printer

When selecting a place to set up your printer, choose a convenient location that provides the following:

1. A flat, stable surface.
2. Adequate room around the printer to allow easy operation and maintenance. Make sure it's close enough to the computer for the printer cable to reach, and be sure you can easily unplug the power cord.
3. Moderate environmental conditions. Select a cool, dry area and protect your printer from direct sunlight, excessive heat, moisture, or dusty.
4. Appropriate power source. Make sure you use a grounded outlet; do not use an adapter plug. Avoid electrical outlets controlled by timers or wall switches; an interruption in power can wipe out the information in your computer or printer memory.

If you place the printer on a stand, follow these guidelines:

1. Use a stand that supports at least 9 kg (19 lb).
2. Never use a stand which is slant. Always keep it level.
3. Provide enough clearance below the stand and between the printer rack and the legs of the rack so the tractor paper flows smoothly.
4. Place cables so they do not interfere with paper feeding; secure them to a leg of the stand if possible.

1.5 Installing the Ribbon Cartridge

1. Before installing the ribbon cartridge, make sure the printer is turned off.
2. Open the printer upper cover.

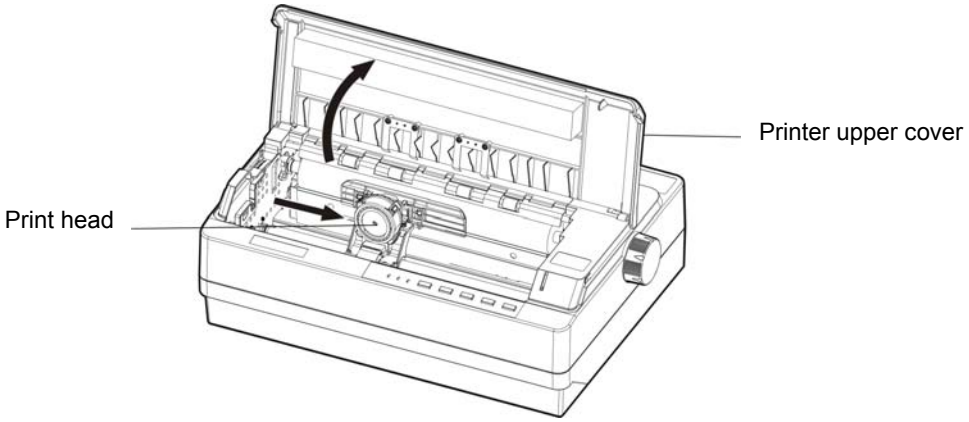


Figure 1-4 open the upper cover

3. Put the gap adjust lever to the uppermost position.

4. Slide the print head to the middle of the printer.（shown as figure 1-4）

Note: Never move the print head while the printer is turned on; this can damage the printer. Also, if you have just used the printer, let the print head cool for a few minutes before you touch it.

5. Please push out the ribbon nip according to the label on the ribbon cartridge.

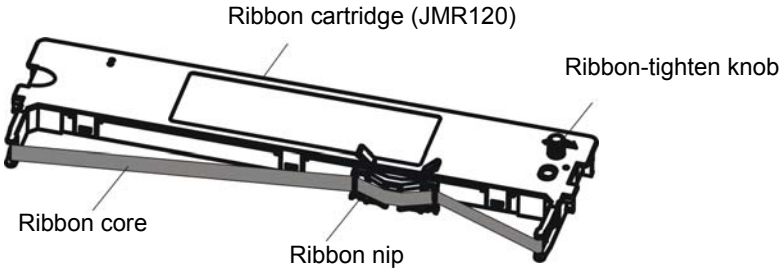


Figure 1-5 ribbon cartridge

6. Hold both sides of the ribbon down firmly to fit the plastic hooks into the printer slots. Then put the ribbon nip between print head and ribbon guide slice, Press it down until it click into place. (shown as figure 1-6)

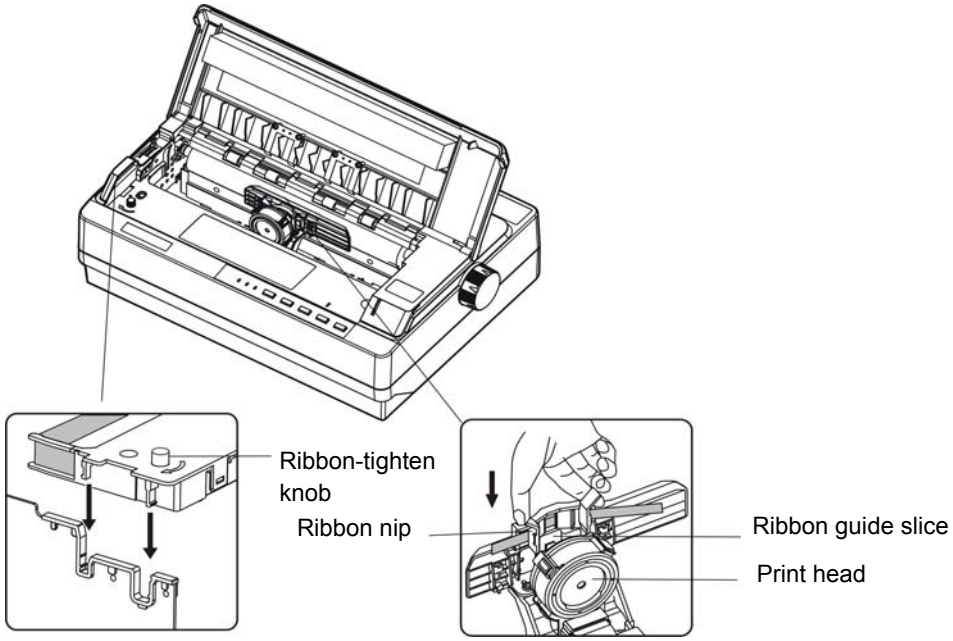


Figure 1-6 install ribbon cartridge

7. Turn the ribbon-tighten knob in the direction of the arrow to remove any slack from the ribbon so it is easier to install.

8. Slide the print head from side to side several times to make sure it moves smoothly。

9. Please put the gap adjust lever to original place and close the upper cover after the ribbon cartridge is installed.

NOTE: 1. When your printing becomes faint, you need to replace the ribbon cartridge. Otherwise, the print quality will be affected and the print head may be damaged.

2. To remove the old ribbon cartridge, first make sure the power is turned off, move the print head to the center of the printer. Then grasp the ribbon cartridge handle on either side and lift it out of the printer.

3. Please use the Jolimark JMR120 ribbon cartridge, our company will not guarantee to keep the printer in good repair, when it is damaged by unauthorized ribbon cartridge.

1.6 Connect the Power Cord

1. Make sure the power switch on the printer is turned off. It is off when the O side of the switch is pressed down.
2. Make sure the voltage required by the printer matches that of your electrical outlet.
3. If the power cord is attached to the printer, connect it to the AC inlet on the printer.
4. Plug the power cord into a properly grounded electrical outlet.

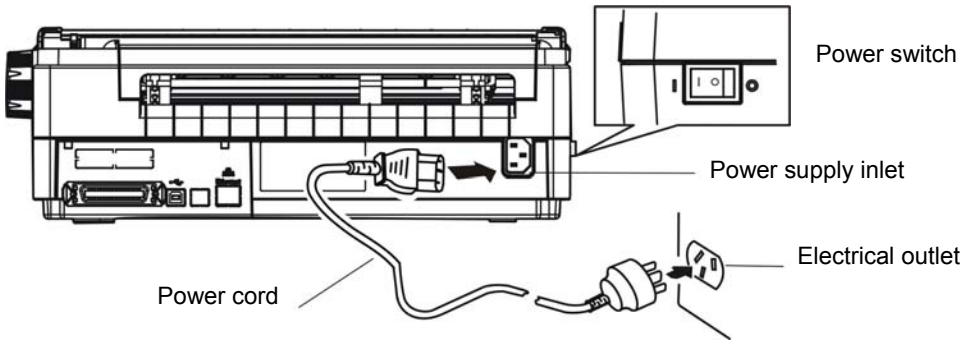


Figure 1-7 turn off the printer

Caution: 1. If the rated voltage and your outlet voltage do not match, contact your dealer for assistance. Do not plug in the power cord.

2. Adopt the electrical outlet connecting the ground properly.

1.7 Printer Self-test Function

The built-in self-test function demonstrates that the printer is working properly. You can run the test with either tractor paper or cut sheets; this section describes the easier way, with cut sheets.

Note: You should use paper at least 210 mm (8.3 inches) wide to run the self-test; otherwise, the print head prints directly on the platen.

1. Make sure the printer is turned off and the paper-select lever is pushed back to the cut sheet position. Raise the back cover.

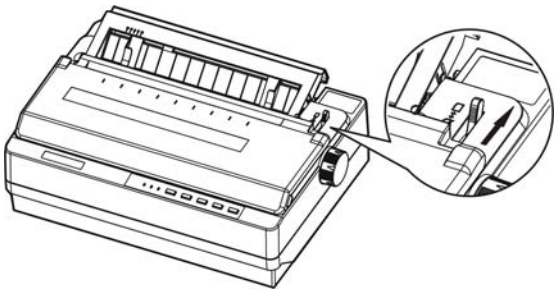


Figure 1-8 set paper select lever

2. While holding down the **TEAR** button, turn on the printer. The **Paper Out** and **ONLINE** indicator blink which indicates the printer is out of paper.

3. Adjust the right paper guide of the back cover to the range of the scale. Then adjust the left paper guide to make the distance match the width of the print paper (as shown below).

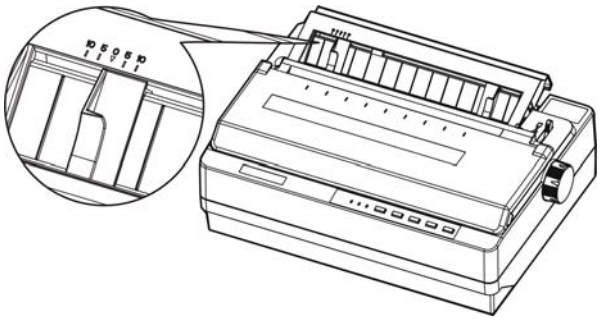


Figure 1-9 adjust the right and the left paper guide of the back cover

4. Slide a piece of cut sheet down firmly between the right and left paper guides until it meets resistance. The printer loads the cut sheet automatically and begins printing when pressing **ONLINE** button.

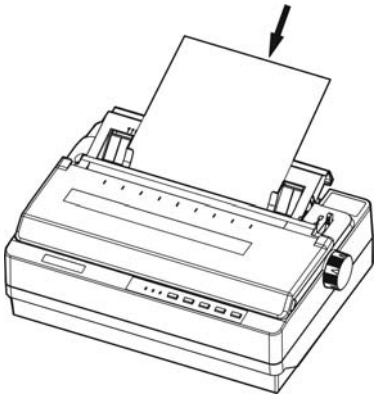


Figure 1-10 install cut sheets

Warning: Always close the printer cover while the printer is printing.

5. To stop printing temporarily, press the **ONLINE** button.

6. To end the self test, make sure the printer is not printing. Press **LF/FF** or **LOAD/EJECT** button to eject cut sheet; then turn off the printer.

ASCII Self-test mode

Jolimark DP350 VX.X XXXXXXX/XX/XX SN: 0000000000

!"#$%&'( )*+-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`ab
!"#$%&'( )*+-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcd
"#$%&'( )*+-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcde

Figure 1-11 ASCII Self-test mode

NOTE: If the self test did not print satisfactorily, see Chapter 4. If it prints correctly, go on to the next section.

1.8 Connecting the Printer to Your Computer

The printer configures with a parallel interface, two USB interfaces, a serial interface or an Ethernet interface. (According to specific interface standards) Connect the printer to the computer with the correct cables. Before you begin, place the printer upright, as shown below. (This makes it easier to connect the cable.)

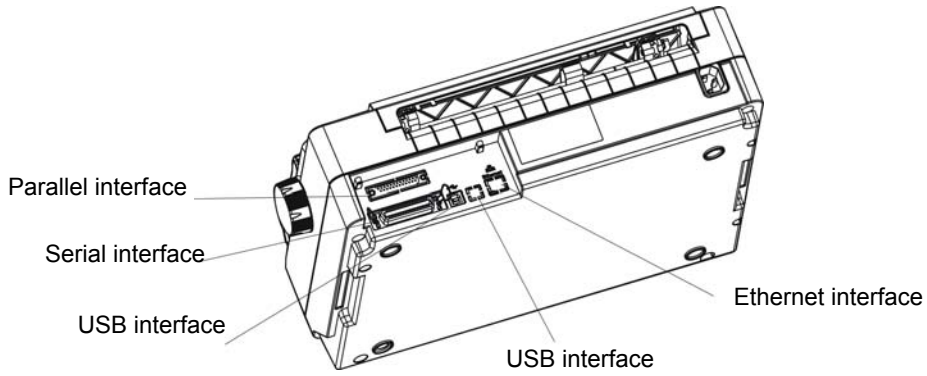


Figure 1-12 lay the back of the printer upward

Note: Before connecting the parallel interface or the serial interface, please make sure the power of the printer is shut down. Only after tighten the cable, could turn on the printer, or it will damage the printer.

1.8.1 Connecting to the Parallel Interface

1. Turn off both the computer and the printer. Plug the parallel cable connector securely into the printer's parallel interface. Squeeze the wire clips together until they lock in place on either side of the connector. (Shown as figure 1-13)

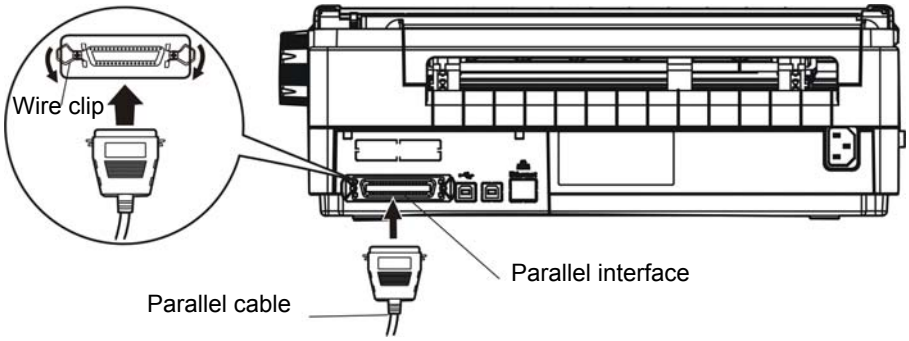


Figure 1-13 connect to the parallel interface

2. Plug the other end of the cable into the computer's parallel interface, and make sure it is connected fast.

1.8.2 Connecting to the USB Interface

1. Plug the USB cable A end (flat shape) into the computer's USB interface.
2. Plug the USB cable B end (square shape) into the printer's USB interface.

Note: Don't impact the plug after connecting to the USB cable.

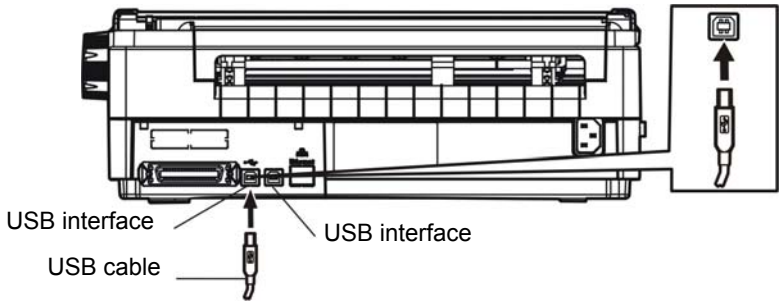


Figure 1-14 connect to USB cable

1.8.3 Connecting to the Serial Interface

1. Turn off both the computer and the printer. Plug the serial cable connector securely into the printer's serial interface. Tighten the screws on either side of the connector.

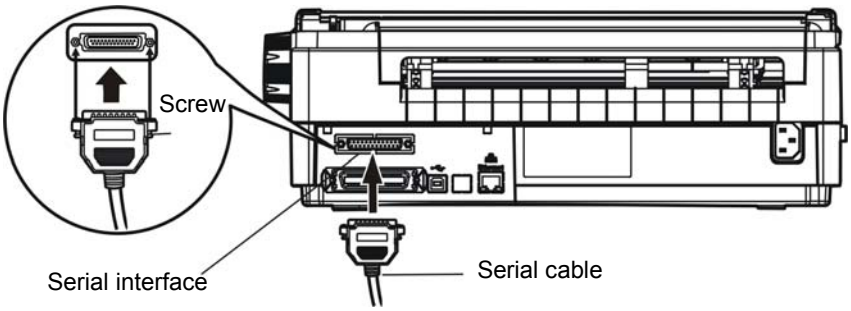


Figure 1-15 connect to serial interface

2. Plug the other end of the cable into the computer's serial interface; then tighten the screws on either side of the connector.

1.8.4 Connecting to the Ethernet Interface

Plug the RJ-45 crystal end of the Ethernet cable into the printer, and plug the other end into the LAN. (Shown as figure 1-16)

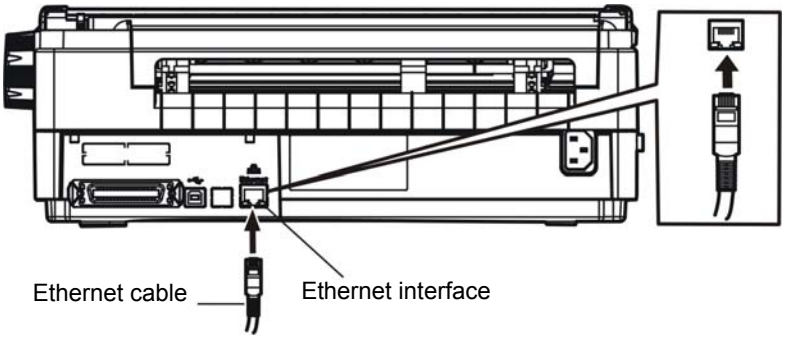


Figure 1-16 connect to the Ethernet interface

Note: The details of Ethernet interface printer's net setting please refer to the *User's Manual*.

1.9 Installing Printer Driver

Please use the cable to connect computer with printer, then turn on the computer and the printer, put the drive CD into the CD-ROM. Install driver by the following way:

Auto-install way

Double click the file "Setup.exe" in the driver disc, install driver by the following direct.

Note: Auto-install just run in the operation system of Windows 2000 or above.

Hand operated installing way

Note: The hand-operated install ways of serial interface and parallel interface are the same.

The installing steps for Windows 2000/XP/Vista with parallel cable are as follows:

1. Click "Start" → "Settings", select "Printers".
2. Click "Add Printer", then it will show a window of "Add Printer Wizard", click "Next", then please read the select direct carefully, Such as, select "Local printer" in the "Local or Network Printer" window, then click "next".
3. Come out a window of "Select the Printer Port", select a usable port. Such as, select "LPT1: printer port", click "Next".

4. Come out a window of "Manufacturers/Printers", click "Have Disk...".
5. Come out a window of "Install From Disk". Please according to the operating system environment, such as Windows XP operating system you should select the path as follow: CD-ROM-"Driver"-"WIN2000 (XP-Vista-Win7)", that you can find a file named: DP350.inf, click "Open", then click "OK", click "Next".
6. Follow the direct click "Next" gradually till the installation is finished.

The installing steps for Windows 7 with parallel cable are as follows：

1. Click "Start" → "Devices and Printers".
2. Click "Add a printer", then it will show a window of "Add Printer", click "Add a local printer", and then click "Next".
3. Come out a window of "Choose a printer port", select "Use an existing port", such as, select "LPT1: Printer Port", click "Next".
4. Come out a window of "Manufacturers/Printers", click "Have Disk...".
5. Come out a window of "Install From Disk". Please according to the operating system environment, should select the path as follow: CD-ROM-"Driver"-"WIN2000 (XP-Vista-Win7) ", where you can find a file named: DP350.inf, click "Open", then click "OK" to return to the window of "Manufacturers/Printers", click "Next".
6. Follow the direct click "Next" gradually till the installation is finished.

The USB interface installing steps for Windows 2000/XP/Vista/Win7 are as follows:

The following steps are used Windows XP as example. There are slight differences among different operating systems.

1. Connect an USB cable and turn on the printer.
2. After the computer find out new hardware and finish searching, come out a window of "Found New Hardware Wizard", choose "Install from a list or specific location (Advanced), click "Next".
3. Come out a window of "Add New Hardware Wizard"-"Windows operation", choose "Don't search, I will choose the driver to install (D)", click "Next".
4. Come out a window of "Hardware Type", select "Printer", click "Next". Come out a window of "Manufacturers/Printers", click "Have Disk...".
5. Come out a window of "Install From Disk". Please according to the operating system environment, you should select the path as follow: CD-ROM-"Driver"-"WIN2000 (XP-Vista-Win7)", where you can find a file named: DP350.inf, click "Open", then click "OK" to return to the window of "Add printer wizard", click "Next".
6. Follow the direct click "Next" gradually till the installation is finished.

The installing steps for Windows 98 are as follows:

（1）The installing steps with a parallel cable or a serial cable:

1. Click "Start" → "Settings" → "Printers".
2. Click "Add Printer", then it will show a window of "Add Printer Wizard", click "Next", then please read the select direct carefully, Such as, select "Local printer" in the "Local or Network Printer" window, then click "Next".
3. Come out a window of "Click the manufacturer and model of your printer",click"Have Disk...", please click "Browse", select the path as follow: CD-ROM-"Driver"-"WIN98 (W-

   INME) ", where you can find a file named: DP350.inf, click "Open", and then click "OK".
4. Come out a window of "Install From Disk", click "OK", return to a window of "Add Printer", then click "Next".
5. Come out a window of "Printer port", select "Available ports", such as, select "LPT1: Printer Port", click "Next", and then show the printer's name. If the system is not installed by other printer driver process，the printer is treated as default printer by the application process of Window98

environment, click "Next". Otherwise according to prompt, choose the printer is default: "Yes", click "Next", choose "Yes-(recommended)", click "Finish".

Come out a window of "Printer test page completed!", click "Yes".

6. The printer driver process is installed successfully.

（2）The installing steps with an USB cable:

Note: 1. As the system of Windows 98/ME doesn't have integrated USB drive control, please install USB drive before using USB interface printing. Then install USB printer drive.

2. If it has installed the USB drive, please install the USB printer drive directly as the following steps.

The installing steps of USB driver:

1. Connect an USB cable and turn on the printer.
2. After the computer find out new hardware and finish searching, come out a window of "Add New Hardware Wizard", click "Next".
3. Come out a window of "Add New Hardware Wizard"-"Windows operation", choose "Search the best driver for the device (recommended)", click "Next".
4. Come out a window of "Search for new drivers", check "Specify a location", click "Browse" , select the path as follows: CD-ROM-"Driver"-"【WIN98(WINME)\USBdriver】", then click "OK".
5. Return to a window of "Search for new drivers", click "Next"; Come out a window of "Windows driver file search for the device:", click "Next".
6. After the system finishes installing the file automatically, come out a window of "USB print supported, click "Finish".
7. The printer USB driver process is installed successfully.

The installing steps of USB printer driver:

1. Click "Start" → "Settings" → "Printers".
2. Click "Add Printer", then it will show a window of "Add Printer Wizard", click "Next".
3. Come out a window of "Click the manufacturer and model of your printer", click "Have Disk...", please click "Browse", select the path as follow: CD-ROM-"Driver"-"WIN98 (WINME)", where you can find a file named: DP350.inf, click "Open", and then click "OK".
4. Come out a window of "Install From Disk", click "OK", return to a window of "Add Printer", then click "Next".
5. Come out a window of "Printer port", select "Available ports", select "JMUSB", click "Next", and then show the printer's name. If the system is not installed by other printer driver process， the printer is treated as default printer by the application process of Window98 environment, click "Next". Otherwise according to prompt, choose the printer is default: "Yes", click "Next", choose "Yes-(recommended)", click "Finish". Come out a window of "Printer test page completed!", click "Yes".
6. The printer driver process is installed successfully.

1.10 Network Settings

Please use Jolimark network setting software NetFinder to set the IP address for Jolimark printers, which can be found in the CD or downloaded from www.jolimark.com.

Note: The network printing function needs the operation system of Windows2000 or above.

1.10.1 Connecting Printer

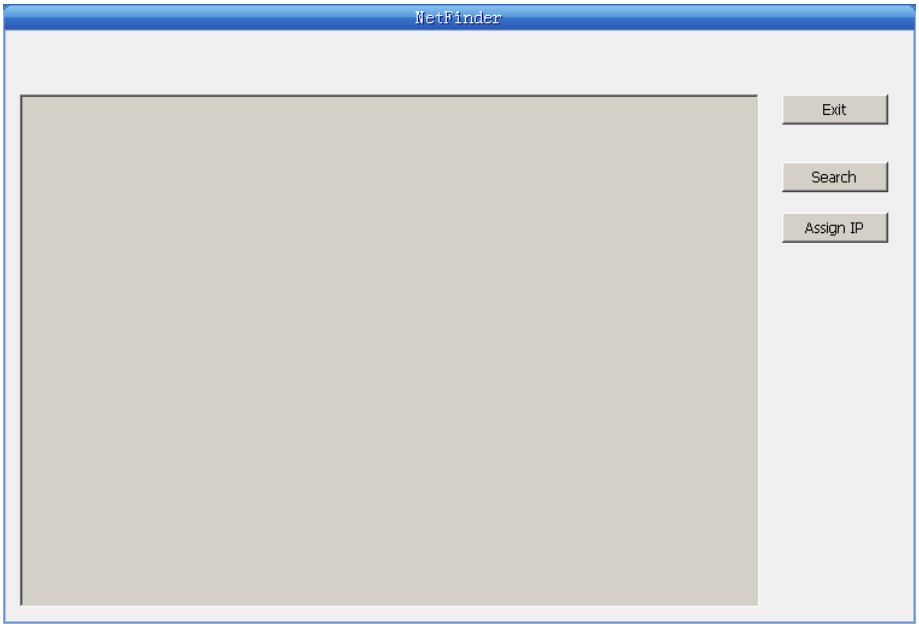
Power on the printer, connect with the Ethernet cable which has been connected to LAN, and look into the information of Ethernet LED indicator to ensure the printer has entered into the normal connection.

Yellow LED	Green LED	Description
ON	Blink	Normal
OFF	OFF	Not connect to network

1.10.2 Setting IP Address

1. Run NetFinder Software

   Double click NetFinder.exe in the PC which connects the printer in the same LAN. The figure of the software is shown as follows:



   Button description:

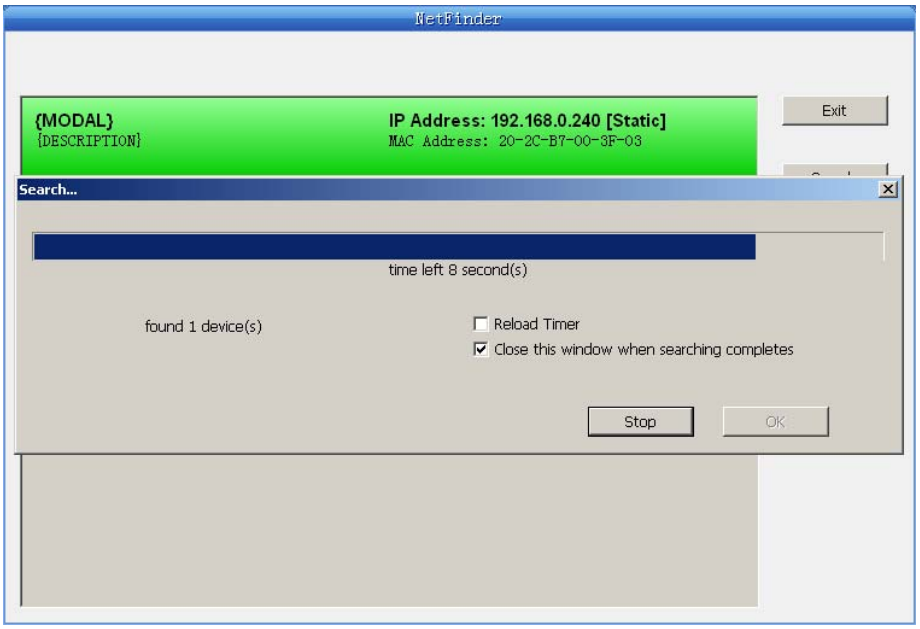
   Exit — Exit from the software

   Search — Search printers in the same LAN

   Assign IP — Modify the IP address and other settings for the specified printer.

2. Search printer

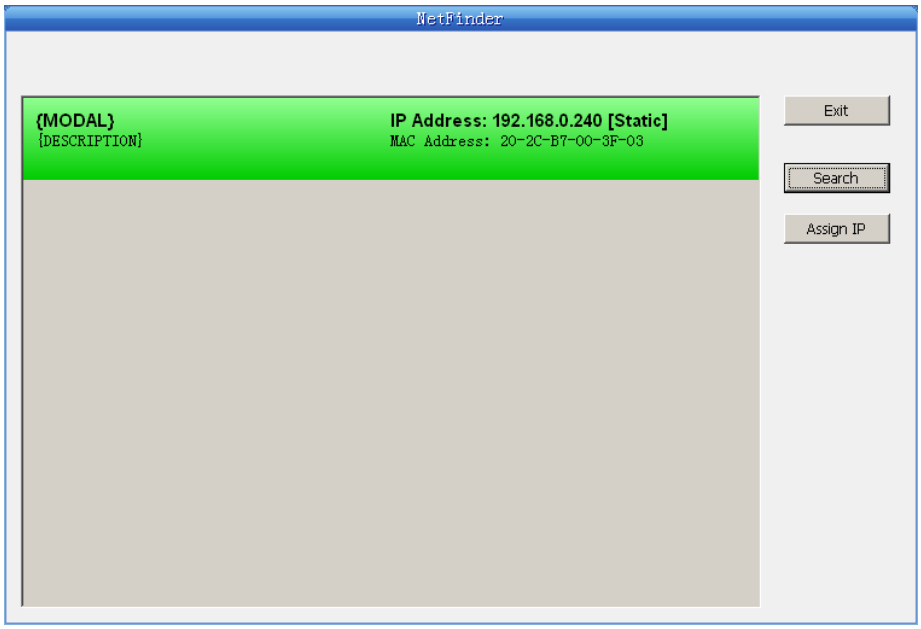
   Click "Search" button in the main interface, the dialog box appearing will begin searching automatically and show appearance, listing a printer in the main interface if found. The time is counting down in the progress bar (10s in total) and the search will finish as soon as the time is over. When going on searching, press “search” button again.



If the printer still can not be found out when the network connection is correct and in the same network, please check whether the network fire wall on the PC open or not. If there is fire wall, please close it temporarily, open again after finishing searching and setting a printer completely.

3. Setting printer's IP address

The printer's information is listed in the main interface, the left side of which is the model and description and the right is the IP and MAC address. What's more, the assign mode (dynamic/static) is noted behind the IP address.



1) Correlative description for IP address settings

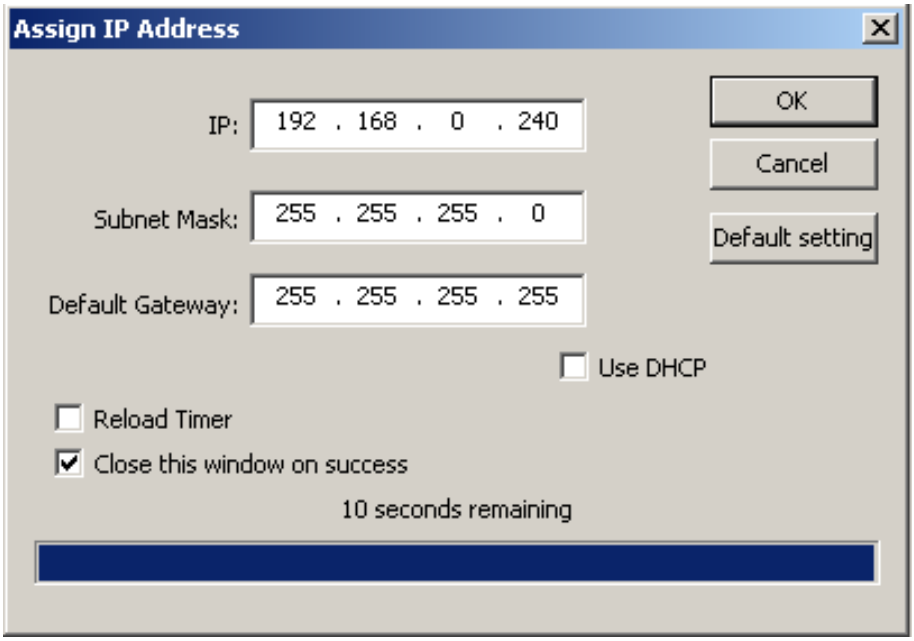
In order to search and set printer's IP address conveniently for the first time, the factory default setting is DHCP mode which assigns IP address dynamically. If there is no DHCP server in the connected LAN and printer is set to DHCP mode as well, then it will use the internal pre-set address (IP: 10.0.0.1, Subnet Mask: 255.255.255.0) automatically.

It is suggested that printer's IP set to static in actual usage, which can cut down the time when initializing the Ethernet interface as the printer is turned on and prevent IP conflicts (The dynamic

address used in printer may conflict with another one). The network segment part of the IP address and Subnet Mask must be the same as those of PC connecting with a printer. For example, the address of working PC is 192.168.0.1/255.255.255.0 (IP/Subnet Mask),then which of printer should be set to 192.168.0.x/255.255.255.0（x=2~254 and should avoid the IP in used. It is not restricted for NetFinder to search printers in the same network but different segment parts (can not stride gateway). Relative glossary of IP address may refer to corresponding information.

2) Setting printer's IP address

Select the printer information to be modified (black frame appears), click "Assign IP" button. Set the IP in the dialog box appearing.



Check the "Use DHCP" if need to assign dynamic address, the settings above will be disabled automatically. Please make sure there is a DHCP server in the network, or the printer can not receive an effective IP address.

When to specify static address, uncheck "Use DHCP" and fill in "IP address", "Subnet Mask" and "Default Gateway". If there is no gateway in the network, fill 255.255.255.255 in the "Default gateway". "IP address" and "Subnet Mask" should obey the assigning rules of local LAN (Ethernet), please enquire the administrator of networks which the printer connects to for more details.

Click "OK" to send address setting information to the specified printer. The printer takes response after "Close this window on success" is checked, and then this dialog is closed automatically. Select "Reload Timer" then the software will wait for the printer's response. Generally, printer will take response in a circle time if network connection is correct.

Click "Cancel" if you abandon the modification.

Click "Search" in the main interface again to update printer information after modifying the printer's IP address.

3) Report printer's IP address

Report the printer's IP address, which will be used in the section "Newly-install printer network driver" or "Upgrade-install printer network driver (setting driver's network port)".

1.10.3 Installing Printer Network Driver

The ways of installing network driver are divided into Newly-install way and Upgrade-install way according to whether the PC installs the printer driver or not.

If the printer driver hasn't been installed on the PC, adopt newly-install way whose steps are shown in "Newly-install printer network driver".

If the printer driver has been installed on the PC, adopt Upgrade-install way whose steps are shown in "Upgrade-install printer network driver".

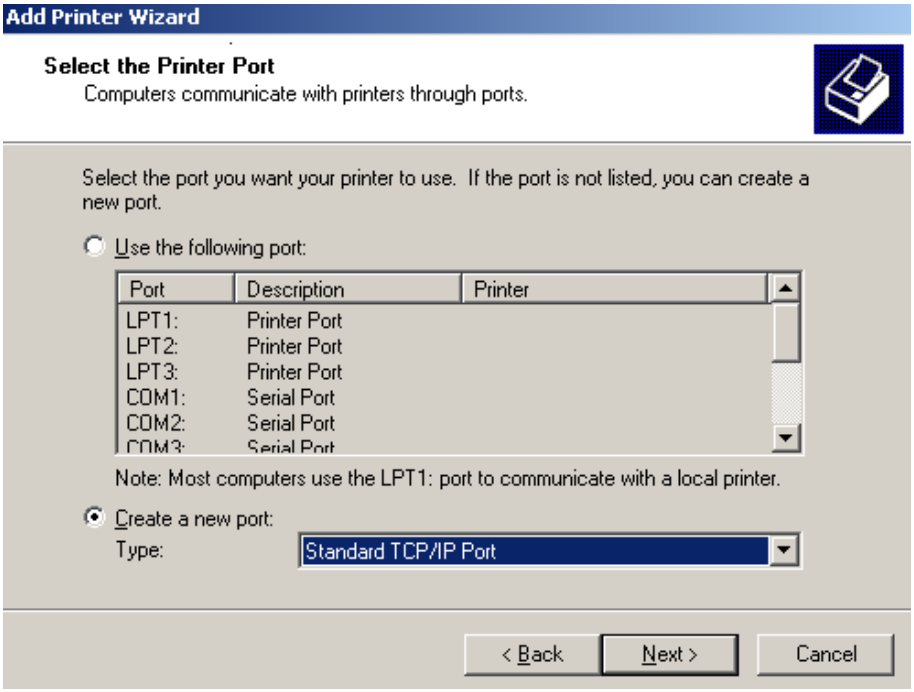
1. Newly-install printer network driver

1) Click "Start" → "Settings", select "Printers".

2) Click "Add printer", then come out a window of "Add Printer Wizard", click "next".

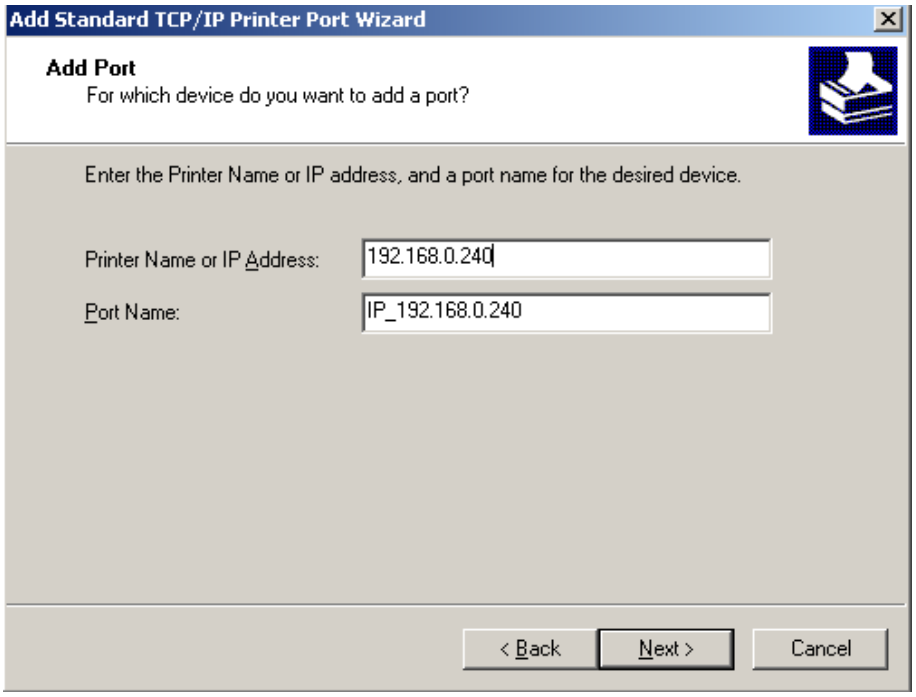
3) Come out a window of "Add Printer Wizard", then please read the select direct carefully. Such as, select "local or Network Printer", then click "next".

4) Come out a window of "Select the Printer port", select a port you want your printer to use. For example, select "Create a new port", select "Standard TCP/IP Port" in the port, click "next".

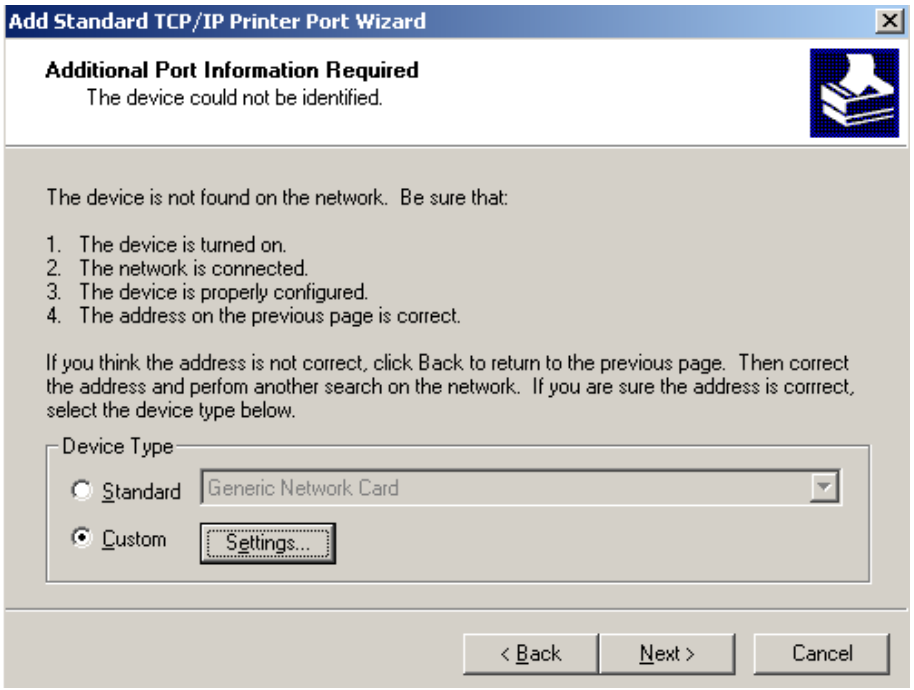


5) Come out a window of "Add standard TCP/IP Printer Port Wizard", click "Next".

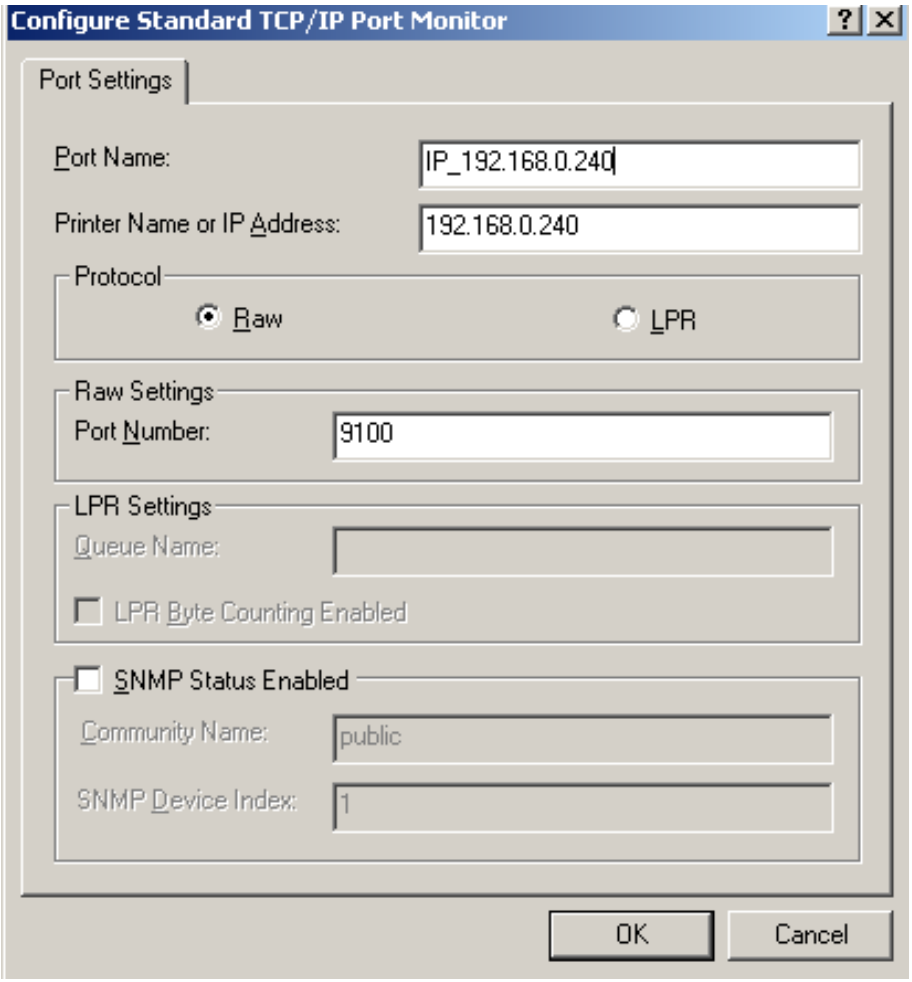
6) Come out a window of "Add Port", enter the IP address reported by the "Setting printer's IP address" in the "Printer Name or IP Address" column. Take IP address "192.168.0.240" for example. "Port Name" is created automatically after finishing filling in IP address.


Add Standard TCP/IP Printer Port Wizard
Add Port
For which device do you want to add a port?
Enter the Printer Name or IP address, and a port name for the desired device.
Printer Name or IP Address:
192.168.0.240
Port Name:
IP_192.168.0.240
< Back
Next >
Cancel

7) Come out a window of “Additional Port Information Required”, select “Custom” in the “Device Type”, and then click “Settings”.


Add Standard TCP/IP Printer Port Wizard
Additional Port Information Required
The device could not be identified.
The device is not found on the network. Be sure that:
1. The device is turned on.
2. The network is connected.
3. The device is properly configured.
4. The address on the previous page is correct.
If you think the address is not correct, click Back to return to the previous page. Then correct the address and perfom another search on the network. If you are sure the address is correct, select the device type below.
Device Type
Standard
Generic Network Card
Custom
Settings...
< Back
Next >
Cancel

8) Come out a window of “Port Settings”. Affirm that “Port name” and “Printer name or IP address” are correct, “Protocol” is “RAW” and “Port Number” is “9100”, click “OK”.



9) Return to “Additional Port Information Required”, click “Next”.

10) Come out a window of “Completing the Add Standard TCP/IP Printer Port Wizard”, click “Finish”.

11) In the selection of "Manufacturers/Printers", click “Have Disk”, and then click “Next”.

12) Come out a window of “Install From Disk”. Please according to the operating system environment, such as Windows 2000/XP/Vista/Win7 operating system you should select the path as follows: CD-ROM-“Driver”-“WIN2000(XP-Vista-Win7)”, that you can find a file named: DP350.inf, click “open”, then click “OK”, then return to the window “install printer software”, click “next”.

13) Follow the direct click “next” gradually till the installation is finish. At this time, printer network driver is installed completely.

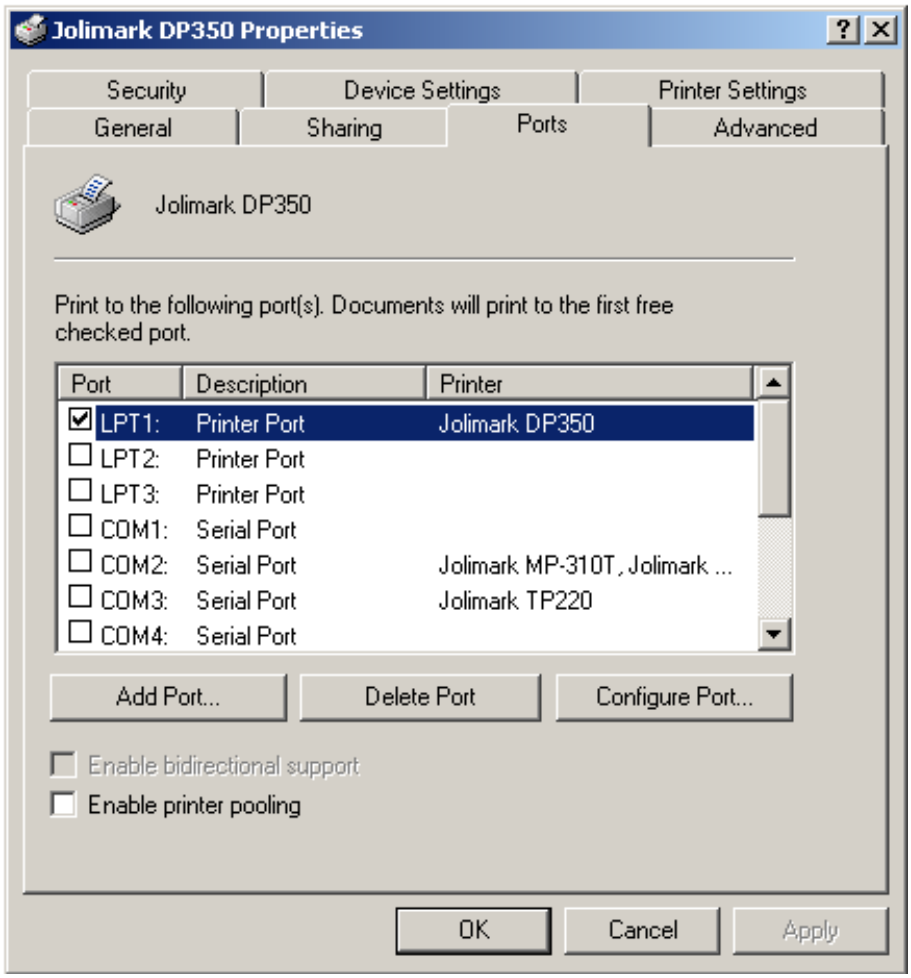
2. Upgrade-install printer network driver (setting driver’s network port)

If PC has installed the printer’s driver, set driver’s network port to carry out network printing. The concrete steps are shown below:

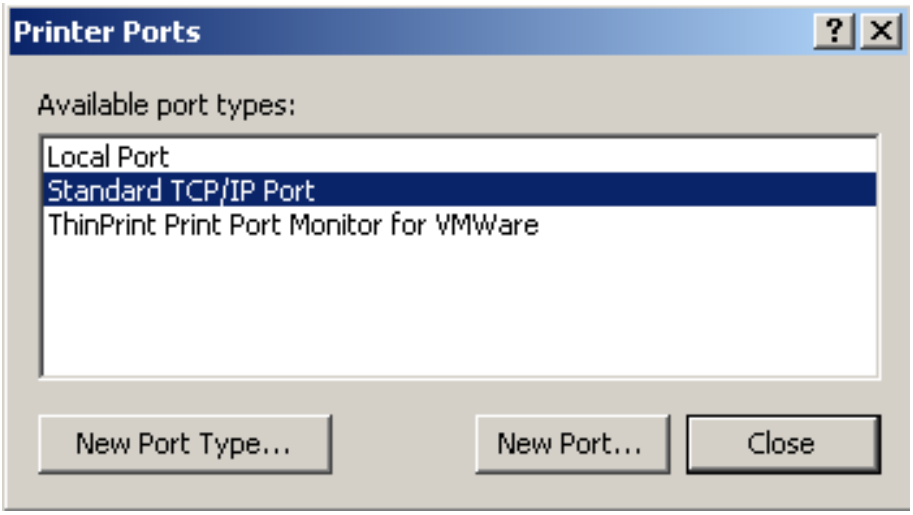
1) Click “Start” → “Settings”, select “Printers”.

2) Right click DP350 driver, click “Properties” on the window coming out.

3) Come out a window of “Properties”, click “Ports” and “Add Ports”.

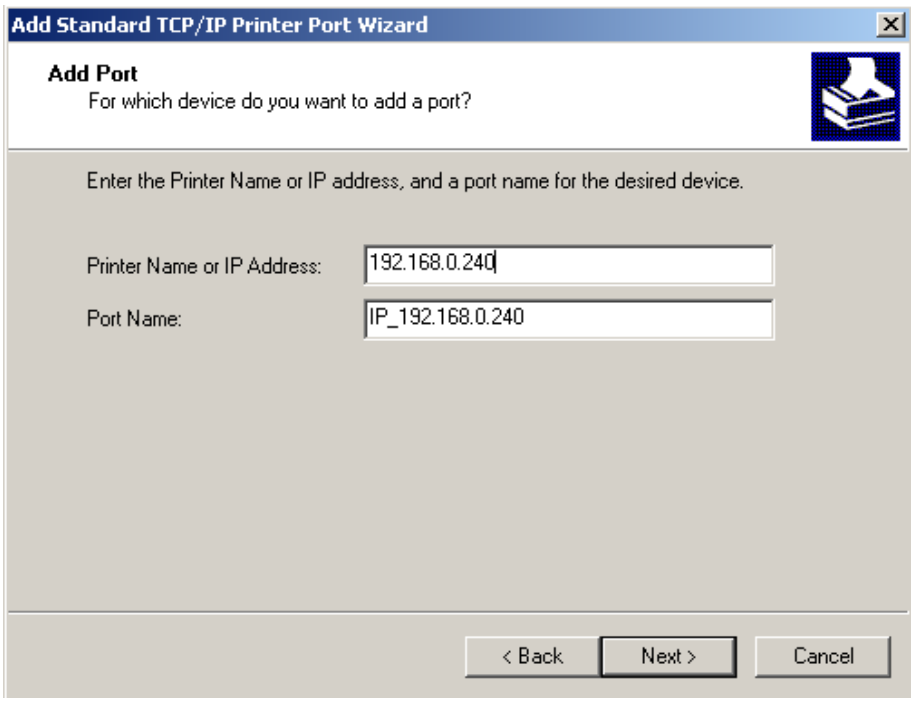


4) Come out a window of “Printer port”, select “Standard TCP/IP Port”, click “New port”.

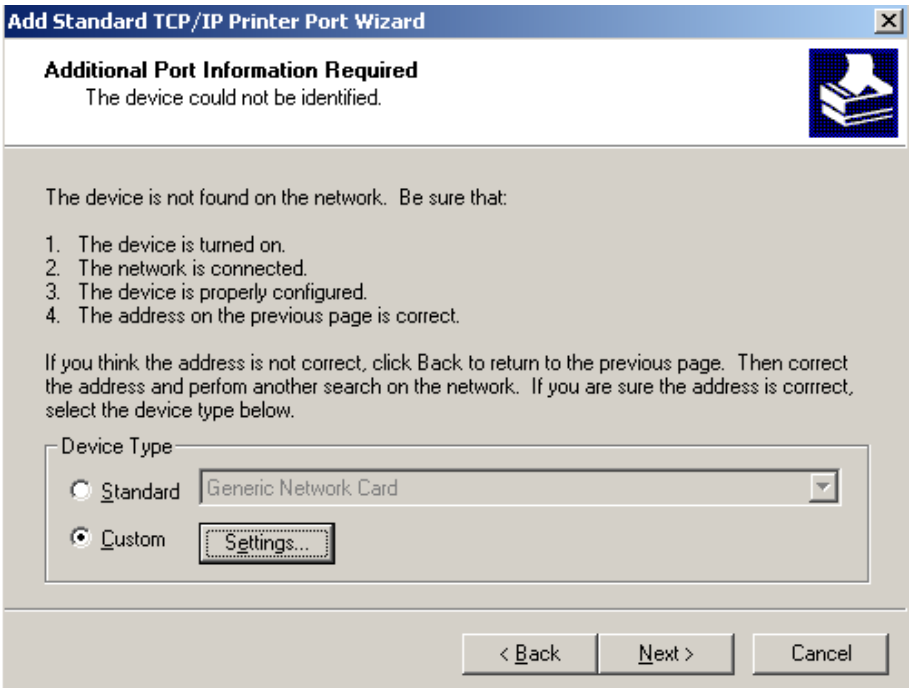


5) Come out a window of “Add Standard TCP/IP Printer Port Wizard”, click “Next”.

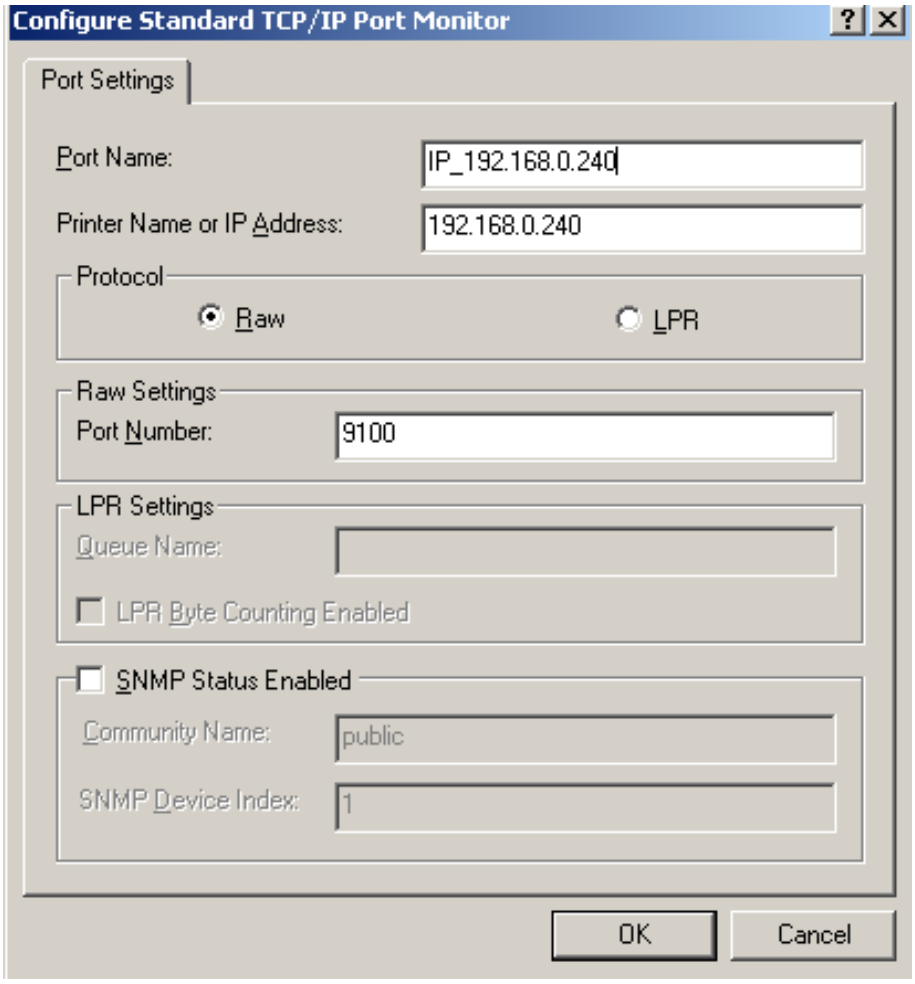
6) Come out a window of “Add a port”, import the IP address reported by the “Setting printer’s IP address” in the “Printer name or IP address” column. Take IP address “192.168.0.240” for example. “Port name” is created automatically after finishing filling in IP address. Click “Next”.


Add Standard TCP/IP Printer Port Wizard
Add Port
For which device do you want to add a port?
Enter the Printer Name or IP address, and a port name for the desired device.
Printer Name or IP Address:
192.168.0.240
Port Name:
IP_192.168.0.240
< Back
Next >
Cancel

7) Come out a window of “Port information”, select “User-defined” in the “Equipment style”, then click “setting”. Come out a window of “Additional Port Information Required”, select “Custom” in the “Device Type”, then click “settings”.


Add Standard TCP/IP Printer Port Wizard
Additional Port Information Required
The device could not be identified.
The device is not found on the network. Be sure that:
1. The device is turned on.
2. The network is connected.
3. The device is properly configured.
4. The address on the previous page is correct.
If you think the address is not correct, click Back to return to the previous page. Then correct the address and perfom another search on the network. If you are sure the address is correct, select the device type below.
Device Type
Standard
Generic Network Card
Custom
Settings...
< Back
Next >
Cancel

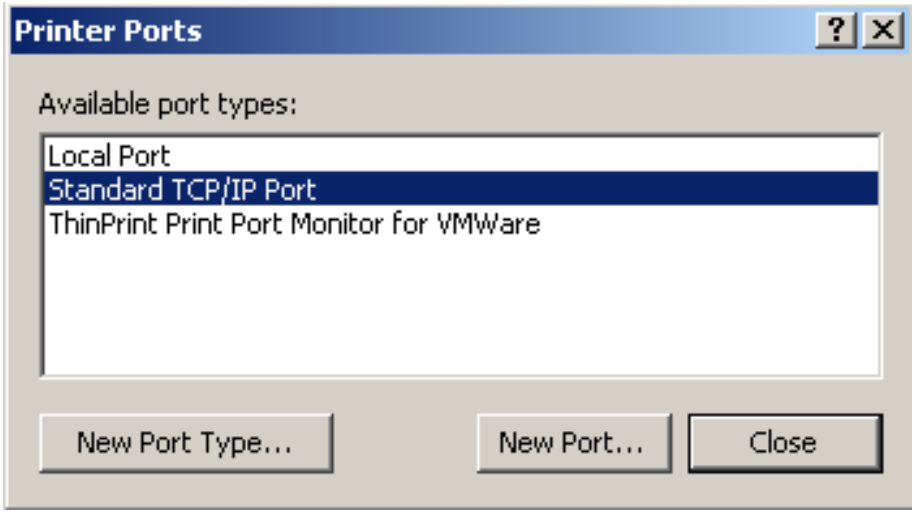
8) Come out a window of “Port Settings”. Affirm that “Port name” and “Printer name or IP address” are correct, “Protocol” is “RAW” and “Port Number” is “9100”, click “OK”.



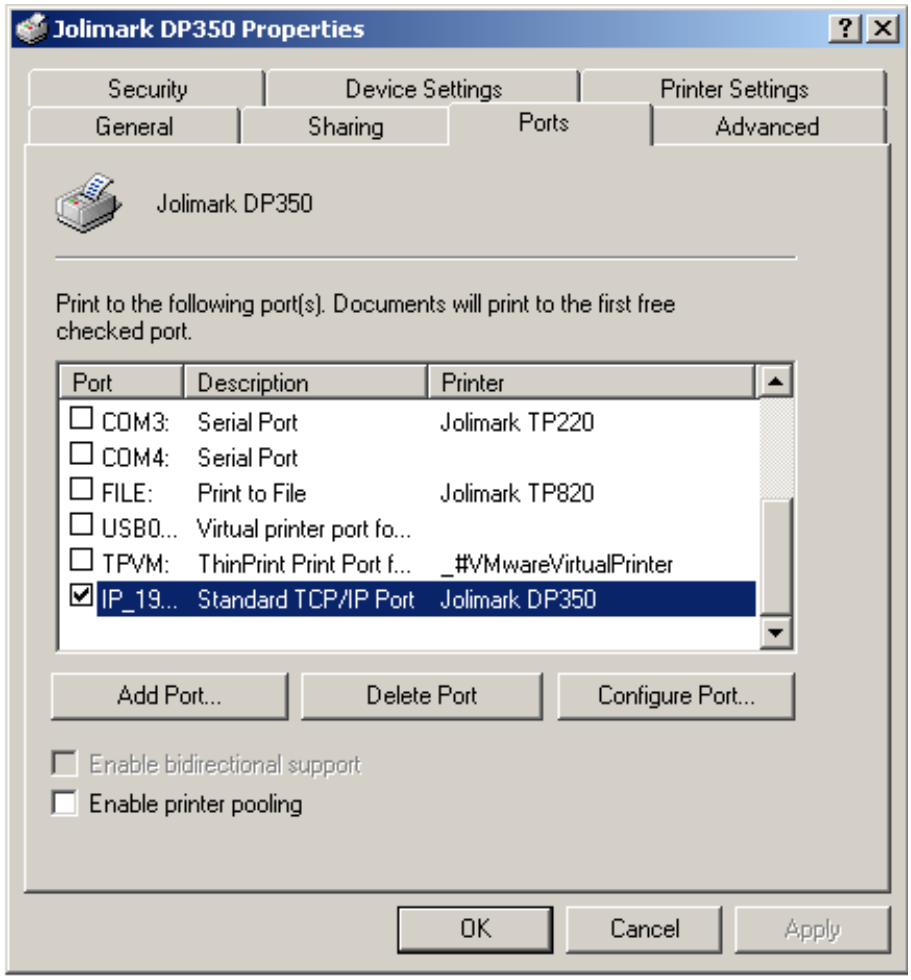
9) Return to “Additional Port Information Required”, click “Next”.

10) Come out a window of “Completing the Add Standard TCP/IP Printer Port Wizard”, click “Finish”.

11) Return to “Printer Ports”, click “Close”.



12) Return to “Properties”, make sure the network port is selected, click “Apply”, and then click “Close”. Thus, printer’s network port setting is finished.


Jolimark DP350 Properties
Security
Device Settings
Printer Settings
General
Sharing
Ports
Advanced
Jolimark DP350
Print to the following port(s). Documents will print to the first free checked port.
Port
Description
Printer
COM3: Serial Port Jolimark TP220
COM4: Serial Port
FILE: Print to File Jolimark TP820
USB0... Virtual printer port fo...
TPVM: ThinPrint Print Port f... _#VMwareVirtualPrinter
IP_19... Standard TCP/IP Port Jolimark DP350
Add Port...
Delete Port
Configure Port...
Enable bidirectional support
Enable printer pooling
OK
Cancel
Apply

Chapter 2 Control Panel Operations

2.1 Control Panel label

Include 5 keys and 3 indicators (shown as 2-1).

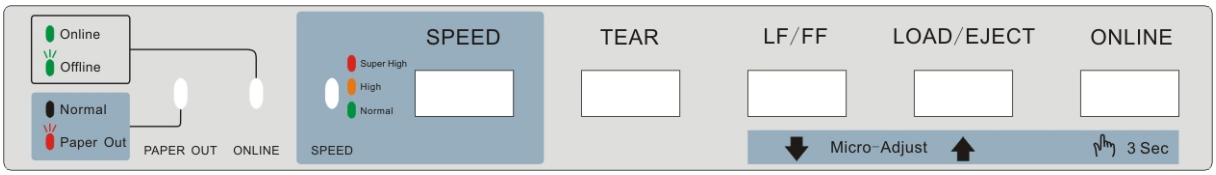


Figure 2-1 control panel

2.2 LED Description

LED	OFF	ON	BLINK
PAPER OUT	Normal	——	Paper out or malfunction
ONLINE	——	Online	Offline
SPEED	The green indicator denotes normal speed, the yellow one denotes the high speed mode and the red one denotes the super high speed mode.		

2.3 Control Panel Basic Function Description

ONLINE	Press **ONLINE** to switch between online and offline.
LOAD/ EJECT	At the state of paper out, press **LOAD/EJECT** once, the paper will be fed into the printing home position automatically when the paper is at the ready position. In the tractor paper mode and pressing **LOAD/EJECT** once, the paper will eject one page of tractor paper when it is at the tear position or just feed paper. When it is at other positions, pressing **LOAD/EJECT** once, the tractor paper will eject one line or hold the **LOAD/EJECT** button down, the printer will eject one page of tractor paper. If in the cut sheet paper mode, press the **LOAD/EJECT** button, the paper will be entirely ejected from the printer.
LF/FF	If the paper is at the print position, press the **LF/FF** button once in standby or offline mode, the printer will feed the paper one line. Alternatively, hold the **LF/FF** button down, the printer will feed one page of tractor paper or eject the cut sheet paper.
TEAR	In the tractor paper mode, in standby or offline mode, press **TEAR** to switch between the tear position and the printing home position.
SPEED	In the offline mode, pressing **SPEED** can switch among the normal mode, the high speed mode and the super high speed mode.

Note: In the tractor paper mode, if paper is out, please press LOAD/EJECT or LF/FF to feed paper after it has been loaded.

2.4 Other Function Descriptions of Control Panel

2.4.1 In the Tractor Paper Mode

TEAR

1. In the offline mode, if the paper is at the print position, press **TEAR** key once and the printer feeds paper to the tear position.
2. In the offline mode, if the paper is at the tear position, press **TEAR** key once and the printer ejects paper to the next page or the printing home position of the current page.

LF/FF

In the offline mode, if the paper is at the print position, press the **LF/FF** button once (less than 0.5 second), the printer will feed the paper one line base on current line spacing setting. Alternatively, hold the **LF/FF** button down, the printer will load one page of tractor paper.

LOAD/EJECT

1. When the paper is at the ready position, press **LOAD/EJECT** once, the paper will be fed into the printing home position automatically.
2. When the paper is at the printing home position, press **LOAD/EJECT** in the offline mode, the paper will return the ready position.
3. When the paper is at the general print position (not the printing home position), press **LOAD/EJECT** once in the offline mode less than 0.5 seconds, the paper is ejected one line. Alternatively, hold the **LOAD/EJECT** button down, the printer will eject one page of tractor paper if the ejectable page length is more than one page. If the paper ejectable length is less than one page, the paper will feed back to the ready position.
4. When the paper is at the tear position, press **LOAD/EJECT** once, the printer will eject one page of tractor paper.

ONLINE

1. If the printer has loaded paper in the offline mode, press the key to enter **ONLINE** mode, the **ONLINE** indicator is on and the printer enters into the print mode.

   Press this key in the online mode, the printer is offline, **ONLINE** indicator blinks and the printer can not print.
2. If the paper is at the tear position in the offline mode, press **ONLINE** button, the printer will go back to the printing home position of current page or the next page.

2.4.2 In the Cut Sheet Mode

LF/FF

If the paper is at the print position in the offline mode, press the **LF/FF** button once (less than 0.5 second), the printer will feed the paper one line base on current line spacing setting. Alternatively, hold the **LF/FF** button down, the printer will eject the paper until the cut sheet is entirely ejected.

LOAD/EJECT

If the paper is at the print position in the offline mode, press the **LOAD/EJECT** button, the paper will be entirely ejected from the printer.

ONLINE

If the printer has loaded paper in the offline mode, press the key to enter **ONLINE** mode, the **ONLINE** indicator is on and the printer enters into the print mode.
Press this key in the online mode, the printer is offline, **ONLINE** indicator blinks and the printer can not print.

2.4.3 Print Speed

the setting method of the print speed：

In offline mode, press the **SPEED** button to switch the print mode among Normal Speed mode, High Speed mode and Super High Speed mode. The green indicator denotes normal speed mode, the yellow one denotes the high speed mode and the red one denotes the super high speed mode.

2.4.4 Micro-Adjust of the Printing Home Position and the Tear Position

Operation steps of adjusting the printing home position: (the printing home position of cut sheet is separated with the tractor paper's. The following is use tractor paper for example)

1. Open the printer. Put the paper select lever to the tractor paper mode, press **LOAD/EJECT** and install tractor paper.

2. Hold the **ONLINE** button down for 3 seconds, ensure the online light blinks, till the printer beeps once. The online indicator and paper out indicator blinks alternately.

   Caution：Don't press SPEED, or the printer can't enter the micro-adjust function.

3. Press **LF/FF** and **LOAD/EJECT** to adjust the printing home position.

4. Press the **ONLINE** button again to save the setting and quit the alternate mode after finishing adjusting.

The operation step of adjusting the tear position is basically the same with the printing home position's. But the exclusive difference is pressing **TEAR** to feed paper to the tear position after install the tractor paper.

Caution: Don't revolve the paper feed knob when the printer is in the process of the micro-adjust.

Note: The adjusted range of original print position is from -18/60 inch to +60/60 inch (base on default position set by the factory).

The adjusted range of tear position is from -15/60 inch to +15/60 inch (base on default position set by the factory).

2.4.5 Feed Paper to the Tear Position

1. Turn on the printer, hold the **ONLINE** button 3 seconds when offline till the **ONLINE** indicator blinks with a beep.
2. Hold the **TEAR** button 3 seconds that you can switch the function of feeding paper to the tear position automatically **ON** or **OFF**.

2.4.6 Other Functions of the Control Panel

KEY	FUNCTION
ONLINE + POWER	Print current setting mode; If long press the **LOAD/EJECT+ LF/FF** button down in online mode, the printer enter setup menu mode.
POWER+ LOAD/EJECT	Chinese self-test mode
TEAR + POWER	English self-test mode
TEAR + LF/FF + POWER	Hex dump mode
LF/FF + POWER	Print pin test mode to test the print pin if in good condition.

2.5 Paper Select Lever

Set paper select lever toward the cut sheet or tractor paper position to select cut sheet mode or tractor paper mode.

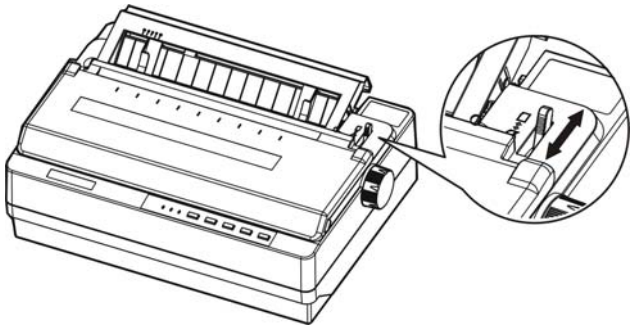


Figure 2-2 the paper select lever

2.6 Paper Feed Knob

The paper feed knob is used to feed paper or eject paper manually. In general, it's better not to use it.

2.7 The Gap Adjust Lever

The gap adjust lever lets you specify the correct setting for your printing material. It is factory-set for standard office paper.

POSITION	PAPER TYPE	
-1	reserved	
0	Cut sheet	
1	2 plies	Fanfold paper
2	3 plies	
3	4 plies	
4	reserved	
5	reserved	

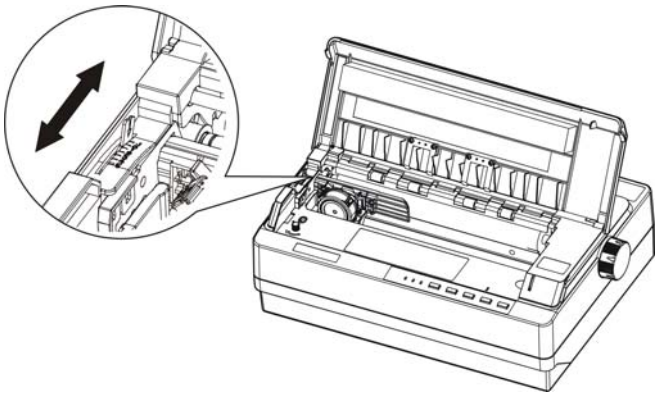


Figure 2-3 the gap adjust lever

Chapter 3 How to Use the Printer

Here are the steps of using printer:

1. Assemble the printer as the chapter 1, connect the printer to your computer and install the driver correctly.
2. Load the correct type of paper.
3. Set the printer if necessary.
4. Send the print command to the printer to print.

3.1 Loading the Paper

In addition to printing on cut sheets and tractor papers, your printer can also print on a wide variety of paper types, including multi-part forms, labels, and envelopes.

Caution: When printing on multi-part forms, as it is thicker than the general paper, it needs the bigger print force, printing past or at the edge of these papers can damage the print head.

Please make sure the printing contents are all within the printable area while printing. The correlative printable area, see the Appendix.A for reference.

3.1.1 Loading Cut Sheets

1. Make sure the printer is powered off, and open the upper cover of the printer, select the correct gap of the printer thought the gap adjust lever as shown in the illustration on chapter 2.7.

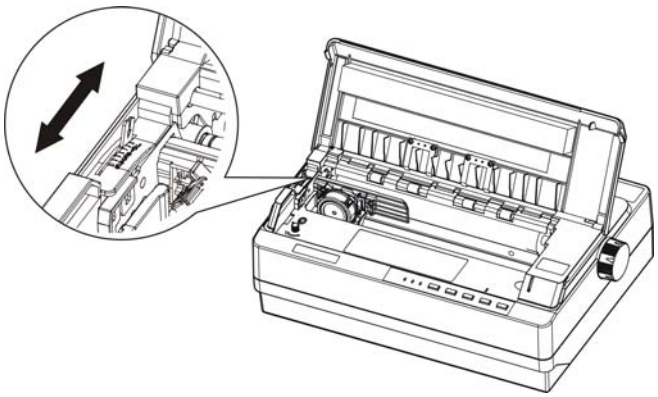


Figure 3-1 adjust the gap adjust lever

2. Close the cover, and set paper select lever toward the cut sheet position.

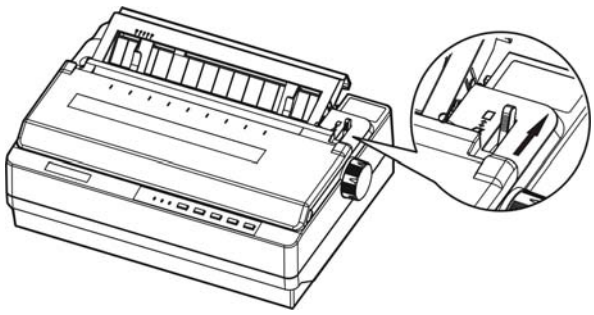


Figure 3-2 adjust the paper select lever

3. Raise the printer back cover to the proper position (shown as figure 3-3), and turn on the printer.

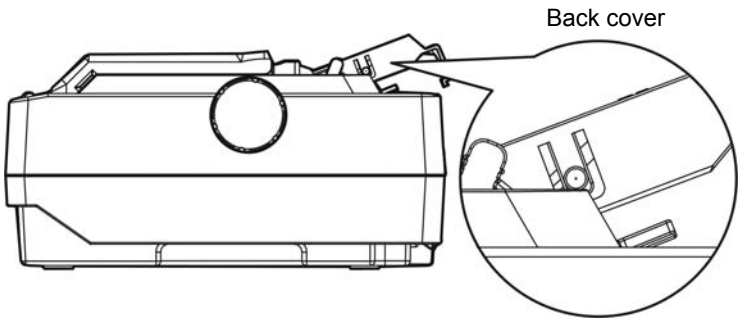


Figure 3-3 adjust the position of the back cover

4. Adjust the right paper guide of the back cover to the range of the scale. Then adjust the left paper guide to make the distance match the width of the print paper. (Shown as below)

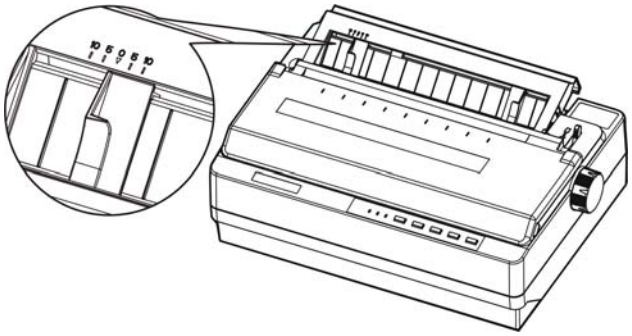


Figure 3-4 adjust the right and the left paper guide

5. Slide a piece of cut sheet down firmly between the right and left paper guides until it meets resistance. The printer loads the sheet automatically. (shown as below)

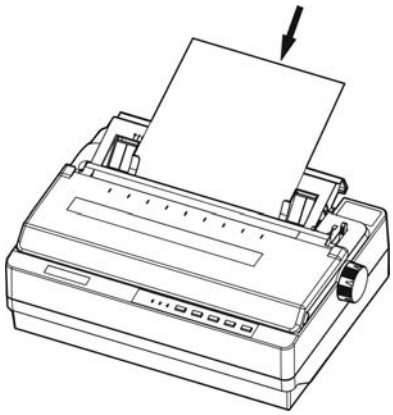


Figure 3-5 install cut sheet

6. Adjust the top-of-form position according to the steps of micro-adjust function if necessary.

Note: Don't feed the paper with paper feed knob, or it will influence the paper not feeding properly.

3.1.2 Loading Tractor Papers

If the print paper is the tractor paper, please reference to below:

1. Make sure the printer is powered off, and open the upper cover of the printer, select the correct gap of the printer thought the gap adjust lever as shown in the illustration on chapter 2.7.

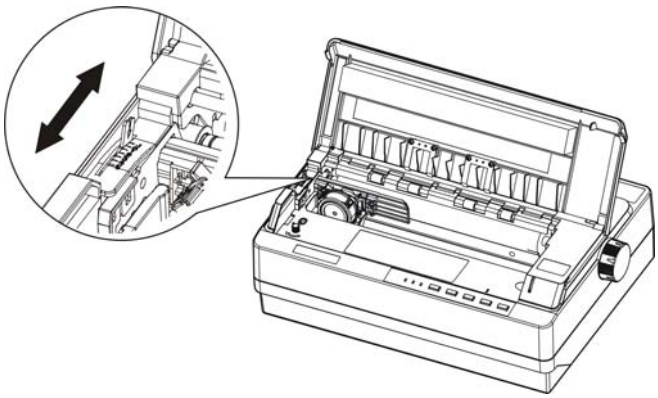


Figure 3-6 adjust the gap adjust lever

2. Close the cover, and set paper select lever toward the tractor paper position.

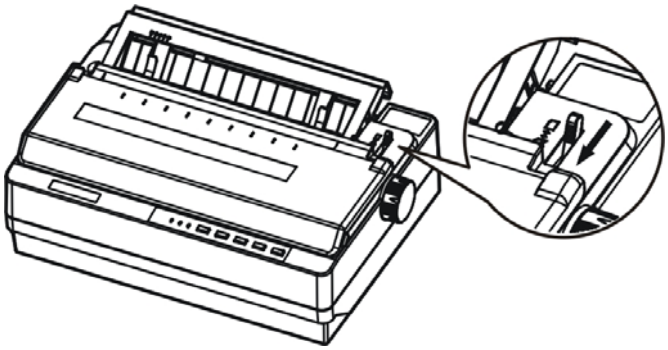


Figure 3-7 adjust the paper selected lever

3. Pull up the right handle of the tractor to loose the right tractor. (Shown as below)

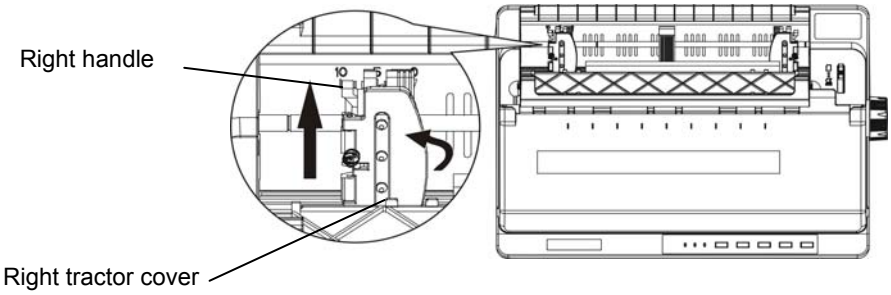


Figure 3-8 loose the right tractor

4. Slide the right paper guide after referring to the scale on the printer. The printer prints to the right of the position marked. Push the right handle of the tractor back to lock it in place. Then slide the left paper guide to match the width of your paper, but do not lock it. Move the paper support so it is midway between the tractors. (Shown as below)

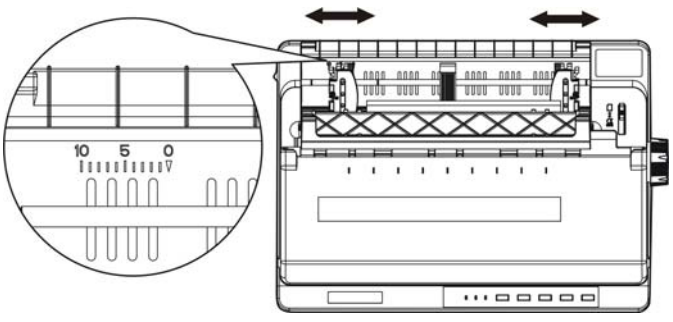


Figure 3-9 adjust the distance between the right guide and the left guide

5. Make sure your paper has a clean, straight leading edge. Open the right and left tractor covers. Fit the first holes of the paper over the tractors pins and then close the tractors covers. Slide the left tractors to remove any slack in the paper and lock it in place. Now the paper is in the ready position. (Shown as below)

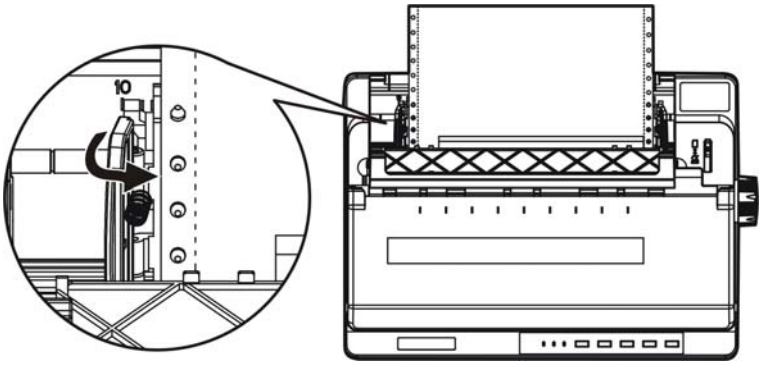


Figure 3-10 install the tractor paper on the tractors

Caution: Only to clean the paper jams when the printer is turned off, can use the paper feed knob on the right side of the printer. Otherwise, you may damage the printer or change the top-of-form position.

6. Make sure the printer cover is closed. Turn on the printer, and press **LOAD/EJECT** to feed paper. You can adjust the printing home position according to chapter 2.2.4. When the printer receives data, it begins printing automatically.

Note: Do not use the paper feed knob to adjust the paper-in position due to the micro-range is limited. When the adjustment exceeds the up-limit or down-limit, the beeper beeps and the position can not be adjusted further. The position is in effect before next adjustment. (The margin set in the software can cover this adjustment, so you had better adjust the top of form position with the software.)

7. When you finish printing (the printer receives no data for several seconds) the printer feeds the perforation of the tractor paper to the edge of the printer cover so that you can tear off easily.

Note: Set the auto tear off function on in the Printer Setting Mode. Otherwise, the printer does not feed the perforation to the edge of the printer cover.

8. If the perforation and the edge of the printer cover do not match, you should adjust the tear off position following the steps in “Micro-adjust of the tear position”, after adjusted, tear down the paper. When you send print data again, the paper automatically feeds back to the printing home position and begins to print.

How to switch tractor paper to cut sheet paper

Firstly, tear down the tractor paper which is having been printed, then hold **LOAD/EJECT** button to eject the paper in the offline mode. Pull the paper select lever to the cut sheet position, and load the cut sheet according to chapter 3.1.1.

Caution: Make sure tractor paper which is having been printed is tore off before ejecting the tractor from the printer, as too many pages ejected can cause paper jammed.

3.1.3 Multi-part Forms

The installing ways of multi-part forms (4 plies is most) and tractor paper are the same. Just pay attention to the following tips:

1. Must refer to the figure below to lift up the back cover, otherwise, it may cause paper jam during printing.
2. Never load multi-part forms joined by metal staples, tape, or continuous gluing.
3. Avoid printing beyond the printable area while printing multi-part forms, or it may damage the print

head (see Appendix for details).

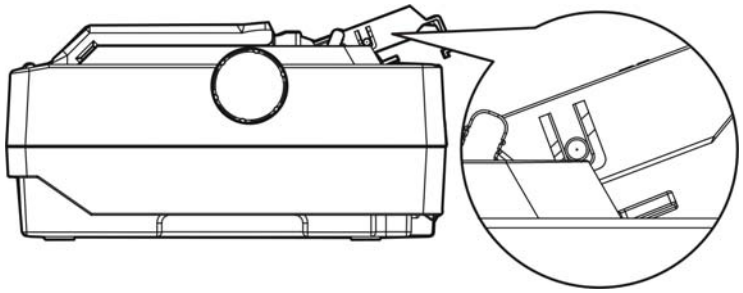


Figure 3-11 raise the back cover

3.1.4 Labels

You basically print on labels as the tractor paper. Keep these tips in mind:

1. Set the paper select lever to “1” position.
2. Make sure the printing stays entirely within the printable area. (See the Appendix for specifications.)
3. Because labels are especially sensitive to temperature and humidity, use them only under normal operating conditions.
4. Do not leave labels loaded in the printer between jobs; they curl around the platen and may jam when you resume printing.
5. Remove the labels from the printer, tear off the fresh supply at the rear of the printer; then press **LF/FF** to advance the remaining labels out of the printer.

Caution: Never feed labels in and out through the printer; they can easily peel off the backing and jam the printer. If a label does become stuck in the printer, contact your dealer.

3.1.5 Envelopes

The method of loading envelopes is basically the same with the cut sheet’s. Just pay attention to the following tips:

1. Before loading an envelope, set the gap adjust lever to position 4 or 5.
2. Insert the wide edge of the envelope into the printer first, printable-side down. When you insert the envelope between the paper guides, push it firmly and hold it until it feeds into the printer.

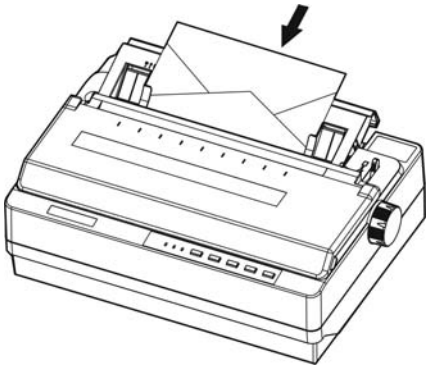


Figure 3-12 loading the envelope

3. Use envelopes only under normal temperature and humidity conditions.
4. Make sure the printing stays entirely within the printable area. The print head must not go past the left or right edge of the envelope or other thick paper. (See the Appendix for specifications.) It’s a good idea to print a test sample using a normal single sheet of paper before you print on the envelopes.

3.2 Changing the Printer Settings

3.2.1 Setting printer parameter through the control panel

1. Press the **ONLINE** button on the control panel as well as turn on the printer. The print head returns with the printer beeping once. If the **ONLINE** indicator and the **Paper Out** indicator blink, it can be indicated that there is paper out.
2. Set the paper select lever to the proper position. (If in cut sheet mode, the paper select lever should in the cut sheet position, otherwise, it should in the tractor paper mode.)
3. After loading paper, in cut sheet mode, the printer will print out the current setting automatically. In tractor mode, after install the paper to the tractor paper, once you press **LOAD/EJECT** button, the printer starts printing the current setting.

Jolimark® DP350

Current Setting Report

VX.X XXX XXXX/XX/XX SN: XXXXXXXXXXXXXXXXXXX MAC Address: XX-XX-XX-XX-XX-XX

DHCP: YES IP: 10.0.0.1 Subnet Mask: 255.255.255.0 Gatewaqy: 255.255.255.255

CHARACTER							
FONT	ROMAN	SANS SER	COURIER	PRESTIGE	SCRIPT	OCR-B	OCR-A
	ORATOR						
ENG PITCH	10 CPI	12 CPI	15 CPI	PROPORTIONAL			
CHI PITCH	6.7 CPI	7.5 CPI					
PAGE LAYOUT							
LINE SPACING	6 LPI	8 LPI					
FORM LENGTH	3 INCH	3.5 INCH	11/3 INCH	4 INCH	5 INCH	5.5 INCH	6 INCH
	7 INCH	8.5 INCH	LETTER	A4	12 INCH		
FORM LOCK	OFF	ON					
PAGE SKIP	OFF	ON					
COMPRESS PRINT	OFF	ON					
SYSTEM SETUP							
LANGUAGE	ENGLISH	CHINESE					
EMULATION	EPSON	IBM					
HIGH DENSITY	OFF	ON					
PRINT DIR	BI-DIR	UNI-DIR	AUTO				
CHAR.MODE	ASCII	CHINESE					
INTL CHAR SET	U.S.A.	FRANCE	GERMANY	U.K.	DENMARK 1	SWEDEN	ITALY
	SPAIN 1	JAPAN	NORWAY	DENMARK 2	SPAIN 2	LATIN AM	KOREA
	LEGAL	HOLAND	TURKEY				
CHARACTER SET	ITALICS	GRAPHICS					
CODE PAGE	U.S.A.	MULTL	PORTUGAL	GANADA	NORWAY	EAST EURO	CYRILLIC
	RUSSIAN	HUNGARY	KAMENICKY	TURKEY	ICELAND	BULGARIA	MAZOVIA
	GRK 437	GRK 851	GRK8859-7	GRK 1253	ARAB NLS	ARAB EXT	WIN LAT1
	WIN LAT2	ISO LTN1	ISO LTN2	TUR8859-9	ISO LTN9	KBL	LATIN 7
QUITE MODE	OFF	ON					
COPY MODE	OFF	ON					
AUTO LF	OFF	ON					
TEAR OFF	OFF	ON					
TEAR POS	OFF	BY CONT	BY CONT1	BY CONT2	BY CONT3	FORM LEN	
COVER OPEN	OFF	ON					
BLACK MARK	OFF	ON					
PIN SWITCH	OFF	ON					
SERIAL 1/F							
BAUD RATE	19200 BPS	9600 BPS	4800 BPS	2400 BPS	1200 BPS		
PARITY	NONE	ODD	EVEN				
DATA BIT	8 BIT	7 BIT					
STOP BIT	1 BIT	2 BIT					
PROTOCOL	XON/XOFF	DIR					

Please press the ONLINE key to enter the online status,
the hole down the LF/FF key and PARK/LOAD key for 3 second to enter SETUP MENU SYSTEM.

PIN TEST

01 ———	02 ———	03 ———	04 ———	05 ———	06 ———	07 ———	08 ———
09 ———	10 ———	11 ———	12 ———	13 ———	14 ———	15 ———	16 ———
17 _____	18 _____	19 _____	20 _____	21 _____	22 _____	23 _____	24 _____

Figure 3-13 current menu setting

NOTE：1. The items in net lines are the current setting.

2. When select the compress printing in the setup menu, high speed printing is invalid.

3. Black mark function is optional. It can be set up according to the customers' requirement. If the fittings of black mark do not install, the black mark item should be closed.

4. If printer hasn't installed Ethernet interface, it will not print out the relative Ethernet information of MAC and IP when it runs self-test or menu printing.

1. Make sure the printer is in online mode. (ONLINE light is on), at the same time, holding the **"LOAD/EJECT" + "FF/LF"** keys for 3 seconds.
   - The Paper Out LED and Online LED will blink twice simultaneously which indicates that the printer enters the setup menu system.
   - The title and main menu are printed out firstly (as the following figure shown), the default settings are underlined. Print head stays under the current default item.

Jolimark® DP350

SETUP MENU SYSTEM

Use the **LOAD/EJECT** key to point the print head to the desired setting.
Use the **LF/FF** key to confirm the current setting
Use the **ONLINE** key to go back the previous menu (Press and hold the **ONLINE** key to go back the main menu).
Press and hold the **TEAR** key to save settings and exit.

Current settings are UNDERLINE New settings will be **FILLED**.

MAIN MENU CHARACTER PAGE LAYOUT SYSTEM SETUP SERIAL I/F PIN TEST

Figure 3-14 Setup menu system

2. Using the following keys to modify the menu setting:

LOAD/EJECT	Select the menu option or menu setting value.
LF/FF	Enter into submenu or confirm menu setting value.
	Note: Newly setting option will be shown in **FILLED**.
ONLINE	Return to upper menu (Hold on pressing **ONLINE** key will return to main menu directly).
TEAR	Save and exit the setup menu system.

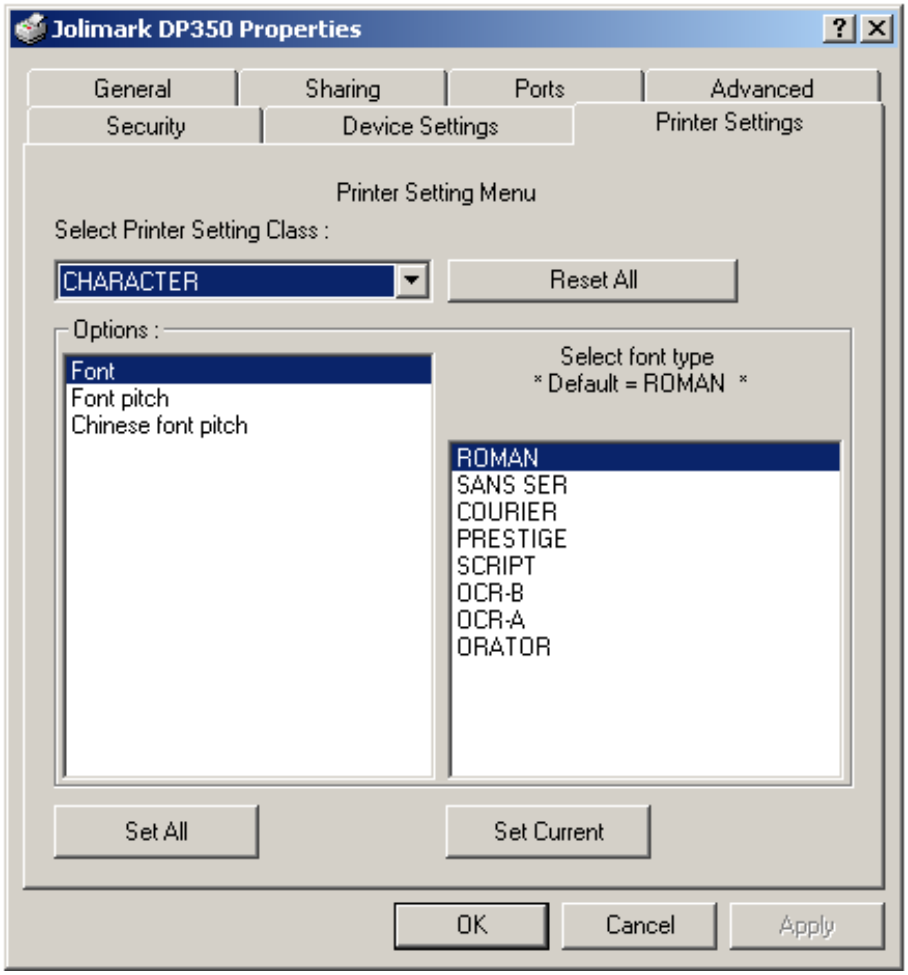
3. Give up the settings just modified, just turn off the printer directly. If you need to save the newly setting, hold on pressing **TEAR** key to save and exit the menu setting mode.
4. Turn off and restart the printer, newly settings are in operation.

3.2.2 Online-aptitude Parameter Settings

DP350 supports the function of online-aptitude parameter settings, which can be set in the PC with the driver installed in.

The concrete setting steps are shown as follows:

1. Make sure that the host and the printer are connected with a cable and both the host and the printer is turned on, the printer should be online as well.
2. Click "Start" → "Settings" → "Printers".
3. Right click "Jolimark DP350" in the "Printers", select "Properties".
4. Click "Device Property" in the property page.



5. The setting way is corresponding with that of printer menu system. In the “Printer Settings” layout, select the first class menu in the combobox of “Select Printer Setting Class”, select the second menu in the “Configuration” and set the item in the current parameters list.
6. Click the button “Reset All” to reset all the parameters to be the driver’s default, but not change the printer’s settings.
7. When setting the parameters: you can click “Set Item” to save the current settings after setting each item, or you can also click “Set All Items” after setting all parameters. After clicking “Set All Item” or “Set Item”, the parameter’s instruction will be sent to the printer.
8. The printer’s parameter settings are changed at once after receiving the instruction and the printer does not need to restart.
9. After finishing settings, click “OK”, exit the “Properties” window.

3.3 Printer Setting Descriptions

1. FONT

Select the font contained in your printer to print.

2. ENG PITCH

Set the pitch to determine the horizontal spacing of the printed ASCII.

3. CHI PITCH

Set the pitch to determine the horizontal spacing of the printed Chinese.

4. LINE SPACING

Set the vertical spacing of the printed characters. You can set it to either 6 LPI (the default setting)

or 8 LPI.

5. FORM LENGTH

You can set the page length to 3, 3.5, 11/3, 4, 5, 5.5, 6, 7, 8.5, 11, 12, or 70/6 (the length of A4 paper) inches.

6. FORM LOCK

Select form lock function ON or OFF.

7. PAGE SKIP

When you turn on this feature, the printer skips over the perforations of tractor paper, providing a 1-inch margin between the last line printed on one page and the first line printed on the next.

8. COMPRESS PRINT

Select compressed print proportion.

9. LANGUAGE

Select the language in the menu. The printer will print with the selected language according to the menu setting.

10. EMULATION

Select the emulation of EPSON ESC/P-K2 or IBM 2391.

11. HIGH DENSITY

Open or close the high quality printing.

12. PRINT DIR

You can choose unidirectional, bidirectional or auto as the print direction for graphics. When the default item is “auto”, the printer prints characters bidirectionally, while prints graphics unidirectionally. The print direction command is effect. If auto is set, the command controlling the print direction is priority. Otherwise either unidirectional or bidirectional is set, it prints both characters and graphics bidirectionally or unidirectionally, the command is of no effect.

13. CHAR. MODE

Select the ASCII or Chinese character mode.

14. INTL CHAR SET

Select interior character (only with EPSON compatible). (U.S.A. FRANCE GERMANY U.K. DENMARK 1 SWEDEN ITALY SPAIN 1 JAPAN NORWAY DENMRK2 SPAIN 2 LATIN AN KOREA LEGAL HOLAND TURKEY)

15. CHARACTER SET

Select character set into Italic Character Table or Graphic Character Table.

16. CODE PAGE

Select a code page.

17. QUIET MODE

Select the printer into quiet mode. Each line will be printed twice in quite mode.

18. COPY MODE

Select copy mode function ON or OFF.

19. AUTO LF

Select (ON) or cancel (OFF) the automatic advance of the paper by one line after every carriage return command.

20. TEAR OFF

Open or close the auto advance paper to tear off position function. When the tear off function is opened, if the printer doesn't receive data a few minutes after printing, the printer will advance the paper to the tear off position automatically.

21. TEAR POS

Turn off the tear position and select to depend on the content or page length.

22. COVER OPEN

Open or close the cover sensor.

23. BLACK MARK

Whether or not choose the black mark detection.

24. PIN SWITCH

Select pins switch mode. The printer auto switches the different pin to print table Line.

25. BAUD RATE, PARITY, DATA BIT, STOP BIT, PROTOCOL

All these items are effect when using serial interface. The printer settings are the same with those of the computer.

26. PIN TEST

Select broken-pin mode. The default setting is every root and printed needle is live. When the printer is printing, if user finds out broken-pin, please select broken-pin mode, set the corresponding pin is "broken", then the printer can automatic compensate broken-pin position.

3.4 Restore the Default Settings

1. Hold on **TEAR**, **LOAD/EJECT** and **LF/FF** keys on the control panel at the same time, and then turn on the printer. The LEDs of the **PAPER OUT** and **ONLINE** on the control panel blink 3 times respectively at the same time and the printer makes two beeps to confirm that the printer's factory settings have been restored.
2. Loosen the keys and switch the printer off and on again.
3. After these steps, the printer's factory settings work.

Note: After restore all the factory default settings. The network setting parameters resume default value at the same time.

Chapter 4 Troubleshooting

Most problems you may encounter while operating your printer, herein, have simple solutions for those problems.

You can check the operation of your printer using the self test. See “Running the Self Test” on chapter 1.7. If the self test works properly, the problem probably lies in the computer, the software, or the interface cable. If the self test does not work, contact your dealer or qualified service person for assistance.

Note: Press LOAD/EJECT while turning on the printer, you can run the Chinese self test.

Press TEAR while turning on the printer, you can run the English self test.

Note: If you are an experienced user or a programmer, you can print a hexadecimal dump to isolate communication problems between the printer and computer. To print a hex dump, turn off the printer. Next, hold down the LF/FF and TEAR buttons while you turn on the printer. Then send data from your computer. The printer prints all the codes it receives in hexadecimal format.

4.1 Power Supply

Power is not being supplied normally.

Phenomenon 1: The lights on the control panel do not go on, and the printer has no action.

Solutions:

1. Check that the power cord is properly plugged into the electrical outlet.
2. If the electrical outlet is controlled by an outside switch or automatic timer, use another outlet.
3. Plug another electrical device, such as a lamp, into the outlet to determine whether the outlet is operating properly.

Phenomenon 2: The lights come on briefly and then go off. The lights stay off even when the power is turned on again.

Solutions: Check whether the printer’s rating voltage is matched with the power cord. If not, unplug the power cord immediately and contact your dealer or a specified Jolimark service center for advice. Do not plug the power cord to the electrical outlet again.

4.2 Printing Problem

The printer does not print.

Phenomenon 1: The Online light is on but nothing is printed.

Solutions:

1. Check that the Driver is installed properly for your printer, as described on chapter 1.9. Check the driver’s printer settings.
2. Check both ends of the interface cable. Make sure the cable meets both the printer and computer specifications.

Phenomenon 2: The Online light and paper out light blink, the printer beeps once.

Solutions: The printer may be out of paper. Load paper in the printer.

Phenomenon 3: The printer sounds like it is printing, but nothing is printed.

Solutions:

1. The ribbon cartridge may not be installed properly. See chapter 1.5.
2. The ribbon may be worn out. Replace the ribbon.
3. The gap adjust lever may be too high. If so, move it to the corresponding thickness position with the paper.

Phenomenon 4: The printer makes a strange noise while printing.

Solutions: Turn off the printer and check for a paper jam, a ribbon jam, or other problems.

Phenomenon 5: The beeper sounds some times and the ONLINE indicator is off.

Solutions:

1. Switch off the printer and power on again.
2. If the **ONLINE** indicator stays off, check for a paper jam or ribbon jam. If it does, turn the printer off and clear the jam.
3. If an error occurs when you switch between cut sheets and tractor paper, make sure the paper select lever is in the correct position.
4. If the printer still does not work correctly, turn off the printer and contact your dealer or a specified Jolimark service center.

● The print is faint or uneven

Phenomenon 1: Printed characters have parts missing at the top or bottom.

Solutions: The ribbon cartridge may not be installed properly. See chapter 1.5.

Phenomenon 2: The printout is faint.

Solutions: The ribbon may be worn out. Replace the ribbon as described on chapter 1.5.

● The ribbon can not move smoothly.

Solutions: The ribbon may be worn out. Replace the ribbon as described on chapter 1.5.

● Dots are missing in printed characters or graphics

Phenomenon 1: A line of dots is missing in the printout.

Solutions: The print head may be damaged. Stop printing and contact your dealer or a specified Jolimark service center to have the print head replaced.

Phenomenon 2: Dots are missing in random positions.

Solutions: The ribbon may be damaged. Replace a new one.

● Printed characters are not what you expected

Phenomenon 1: The fonts or characters you sent with your software did not print.

Solutions: Check whether the driver is correctly configured for your printer. For instructions, see chapter 1.9.

Phenomenon 2: The font selected on the control panel can not be printed.

Solutions: Your software may be overriding your control panel setting. Use the font setting in your software program.

● The print position is not what you expected

Phenomenon 1: The original print position is not correct or the bottom part of one page is printed at the top of the next page.

Solutions:

1. It is also possible to adjust the top of form position using the micro adjust mode. To use micro adjust mode, see “Micro-Adjust” on chapter 2.4.4.
2. Check the page length set by your software and adjust it in the software or in the printer to match the paper length.

Phenomenon 2: Regular gaps occur in the printout.

Solutions: Page skip function may be on. Set page skip function to off in the Printer Setting mode. See

"Changing the printer settings" on chapter 3.2.

4.3 Paper Handling

● Cut sheets do not be fed properly

Phenomenon 1: Paper does not feed.

Solutions:

1. Tractor paper may be left in the printer. Remove the tractor paper. Set the paper select lever to the cut sheet position. Insert a new sheet.
2. Maybe the sensor can not check there is paper if there is no tractor paper in the printer and the paper select lever is in the proper position. Try to move the paper a little left to make sure to touch the paper in sensor.

Phenomenon 2: Paper feeding is skew or the paper jammed.

Solutions: Turn off the printer and pull out the jammed paper. Reinsert a piece of cut sheet straight into the paper guide, and adjust the paper guide to match with paper width. Make sure that the printer upper cover is closed, and power on again.

Phenomenon 3: Paper does not eject completely.

Solutions:

1. Press the **LF/FF** button to eject the page.
2. Make sure the printer upper cover is closed.
3. The paper may be too long. Check whether the paper used meets the specifications specified in the Appendix, and the using paper must be within the specified range. See the paper specifications in the Appendix.

● Tractor paper does not feed properly

Phenomenon 1: The tractor does not feed the paper.

Solutions:

1. Check that the paper select lever is pulled forward to the tractor paper position. If not, move the lever to the correct position.
2. If this problem still can not be solved, its cause maybe that the paper has come off the tractor. Reattach the paper to the tractor.

Phenomenon 2: Paper feeding is crooked or the paper jammed.

Solutions:

1. Make sure the position of your paper supply can not prevent it from feeding.
2. Make sure your paper supply is positioned within 1 meter (3 feet) off the printer.
3. Make sure the printer upper cover is closed.
4. Make sure the tractors positions are correct. Position the right tractor at the diamond-shaped guide marks.
5. Check that the holes on the both sides of the paper are aligned with each other. Also, make sure the tractors are locked and their covers are closed.
6. Check whether the paper specifications meet the standard request according to the Appendix A.

Phenomenon 3: The paper does not eject completely.

Solutions:

1. May be the page length is too long. When using the latter cover, tear off the paper having entered the printer, then press the **LF/FF** button to feed the paper forward. When using the tractors, tear off the last paper printed out, then press the **LOAD/EJECT** button to feed the paper backward.

2. Please make sure the paper length is within prescribed range. (Refer to the paper specifications in Appendix A)

Phenomenon 4: When you switch between cut sheets and tractor paper, the beeper sounds some times and the online indicator is off.

Solutions: There is paper left in the paper in channel while you change the paper select lever position. Return the paper select lever to the previous position and eject the paper. Then change the paper select lever position again.

4.4 Alignment Adjust Mode

Enter the alignment adjust mode to improve the print quality when the printer is used for a long time.

Note: When the gap adjust lever is in the position of 2 or above, the printer is in copy mode automatically. Users can set the gap adjust lever according to specific paper type (cut sheet or tractor paper), then adjust the alignment following the steps below:

1. Turn on the printer, make sure the printer is paper in then turn off the printer.
2. In the online mode, press and hold on the **LOAD/EJECT** key and **TEAR** key until the **Paper Out** and **ONLINE** indicators blink simultaneously, the printer enters the graphic adjust mode and print out the graphic alignment setting.
3. After entering the alignment adjust mode, press the following keys to adjust the degree of make columns:

EJECT/LOAD	Each press this key, the even line will move left with one step (the adjusted value is increased)
	Press **ONLINE** key to check the result.
LF/FF	Each press this key, the even line will move right with one step (the adjusted value is decrease)
	Press **ONLINE** key to check the result.
TEAR	Switch to the next DPI adjust state
ONLINE	Store and print the current settings

4. Restart the printer and exit the alignment adjust mode.

Note: Alignment adjust mode will affect the printing quality, think over before adjust it and strict to the instructions while adjusting.

Chapter 5 Printer maintenance

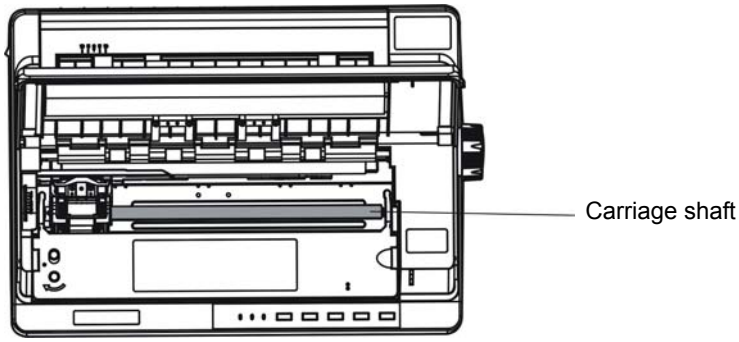


Figure 5-1 Printer cleaning

Periodical cleaning and cleaning tool

Periodical cleaning: Every 6 months or 300 working hours

Cleaning tool: Dry cloth (Use soft cloth while cleaning metal)

Cleaning carriage shaft:

There is a layer of oil covered on the carriage shaft which guarantees the carriage runs smoothly. But the oil is easy to absorb dust, please clean the dust with soft cloth first, and then add proper lube (NYE180 lube of NYE Company is recommended), move print head back and forth to make lube scattered.

Cleaning the form feed path:

Wipe off wastepaper, clean dirt and dust.

Note: 1. Turn off printer and pull out the power cord before cleaning.

2. Being used under dust circumstance, the carriage shaft may stack much dust and affect the print quality.

3. If you have just finished using the printer, let the print head cool for a few minutes before you touch it.

4. Please use a soft cloth for cleaning, do not use combustible solvent.

Appendix A Specifications

A.1 General

<table>
<tr><th>ITEM</th><th colspan="6">DESCRIPTION</th></tr>
<tr><td>Print Type</td><td colspan="6">24-pin Dot Matrix Impact Printer</td></tr>
<tr><td>Print direction</td><td colspan="6">Bidirectional logic seeking</td></tr>
<tr><td>Print width</td><td colspan="6">80 columns (10cpi) / 203.2 mm</td></tr>
<tr><td rowspan="5">Print speed</td><td colspan="3">ASCII</td><td colspan="3">Chinese</td></tr>
<tr><td>Speed</td><td>10 CPI</td><td>12 CPI</td><td>Speed</td><td>6.7 CPI</td><td>7.5 CPI</td></tr>
<tr><td>Super high speed</td><td>400 CPS</td><td>480 CPS</td><td>Super high speed</td><td>201 CPS</td><td>225CPS</td></tr>
<tr><td>High speed</td><td>300 CPS</td><td>360 CPS</td><td>High speed</td><td>134 CPS</td><td>150 CPS</td></tr>
<tr><td>Normal speed</td><td>150 CPS</td><td>180 CPS</td><td>Normal speed</td><td>100 CPS</td><td>112 CPS</td></tr>
<tr><td rowspan="2">Print head</td><td colspan="6">Diameter of wire: 0.22 mm</td></tr>
<tr><td colspan="6">Life: 500 million dots/wire</td></tr>
<tr><td>Resolution</td><td colspan="6">360 x 180 dpi (Max.)</td></tr>
<tr><td rowspan="2">Character set</td><td colspan="6">ASC II: 17 international character sets (American, France, Germany, English, Denmark I, Sweden, Italy, Spain I, Japan, Norway, Denmark II, Spain II, Latin America, Korea, LEGAL, Holland, Turkey)</td></tr>
<tr><td colspan="6">Chinese: GB 18030 Chinese character sets</td></tr>
<tr><td>Code</td><td colspan="6">28 variety: U.S.A, MULTI, PORTUGAL, CANADA, NORWAY, EAST EURO, CYRILLIC, RUSSIAN, HUNGARY, KAMENICKY, TURKEY, ICELAND, BULGARIA, MAZOVIA, GRK 437, GRK 851, GRK8859-7, GRK 1253, ARAB NLS, ARAB EXT, WIN LAT1, WIN LAT2, ISL LTN1, ISO LTN2, TUR8859-9, ISO LTN9, KBL, LATIN 7</td></tr>
<tr><td rowspan="2">Fonts set</td><td colspan="6">ASCII: Draft, Roman, Sans Serif, Courier, Prestige, Script, OCR-B, OCR-A , Orator</td></tr>
<tr><td colspan="6">Chinese: GB18030 Song Ti</td></tr>
<tr><td>Bar code</td><td colspan="6">EAN-13 bar code, EAN-8 bar code, Interleaved 2 of 5, matrix25 bar code, industry25 bar code, 39 bar code, 128 bar code B, 128 bar code C, NW-7 bar code</td></tr>
<tr><td rowspan="2">Character pitch</td><td colspan="6">ASCII: 10 CPI, 12 CPI, 15 CPI, proportional</td></tr>
<tr><td colspan="6">Chinese: 6.7 CPI, 7.5 CPI</td></tr>
<tr><td>Line space</td><td colspan="6">1/6 inch, 1/8 inch, programmable in 1/360 inch increments</td></tr>
<tr><td rowspan="2">Maximum paper feed speed</td><td colspan="6">Normal mode: 3.6 inches per second (Continuous feed)
60ms form feed one line (1/6 inch)</td></tr>
<tr><td colspan="6">Copy mode: 3 inches per second (Continuous feed)
68ms form feed one line (1/6 inch)</td></tr>
<tr><td>Emulation</td><td colspan="6">EPSON ESC/P-K2, IBM2391</td></tr>
<tr><td>Interface</td><td colspan="6">Parallel Interface: Centronics (IEEE1284 NIBBLE)
USB Interface: 2.0 Full-Speed
Serial Interface: RS-232C
Internet Interface: 10/100Base-T
★ According to specific interface standards</td></tr>
<tr><td>Buffer Input</td><td colspan="6">132 KB</td></tr>
<tr><td rowspan="2">Ribbon</td><td colspan="6">Model: JMR120</td></tr>
<tr><td colspan="6">Life: 10 million characters (draft mode)</td></tr>
<tr><td>Noise</td><td colspan="6">＜53 dB (A) (ISO7779 standard)</td></tr>
<tr><td>Control panel</td><td colspan="6">5 keys, 3 indicators</td></tr>
<tr><td rowspan="2">Paper feed type</td><td colspan="6">Cut sheet: feed paper by friction</td></tr>
<tr><td colspan="6">Tractor paper: feed paper by the tractor</td></tr>
</table>

Paper thickness	Set through paper gap adjust lever	
Paper specification	Cut sheet (feed by tractor)	Width: 48 ～ 261 mm
		Thickness: 0.065 ～ 0.14 mm
		Weight: 52 ～ 90 g/m^2
	Continuous paper (feed from rear to front)	Width: 56 ～ 267 mm
		Thickness: 0.065 ～ 0.39 mm
		Weight (single paper) : 52 ～ 82 g/m^2
		Multiple paper (every page): 40 ～ 58 g/m^2
	Label	Width (mount): 101.6 ～ 254 mm
		Least label: 63.5 mm × 23.8 mm
		Thickness (mount): 0.07 ～ 0.09 mm
		Total thickness: 0.16 ～ 0.19 mm
		Weight: 68 g/m^2
Max paper thickness	0.52 mm	
Copy	Original + 4 copes	
Auto function	Optional: Paper edge detect, Black mark detect.	
Compress set	Support graph and character compress printing.	
Special function	Automatic Pin Break Compensation; Automatic Pin Rotation Replacement; Automatic Emulation Match; Online Parameter Setting.	
Physical dimensions	384 (width) × 280 (depth) × 139 (height) mm	
Weight	Approx. 6Kg	
Environmental conditions	Operating environment	Temperature: 5 ～ 35℃
		Humidity: 40%RH ～ 80%RH (No condensation)
	Storage environment	Temperature: -40 ～ 55℃
		Humidity: ≤93%RH (40℃, No condensation)
Power requirements	Rated voltage: 110V / 176 ～ 242 V **Note: Please refer to the nameplate label on the printer for detailed voltage specification.**	
	Rated frequency range: 50Hz ～ 60Hz	
Power consumption	①Operation: 53 W; ②Max: 236 W; ③Standby: 2.9 W. **Note: Only when the produce doesn't connect power supply, could consume zero energy.**	
Reliability	MTBF≥20,000 hours (IEC 605.7 standard)	
Safety marks	EN60950	
EMI	B class	

A.2 Interface Specifications

Your printer is equipped with a parallel interface, two USB interfaces and an option among a serial interface or Ethernet interface. The printer switches automatically to the appropriate interface when it receives data.

A.2.1 Parallel Interface

The parallel interface has the following characteristics:

Data format： 8-bit

Synchronization： /STROBE pulse

Handshaking： BUSY and /ACKNLG signals

Signal level： TTL compatible

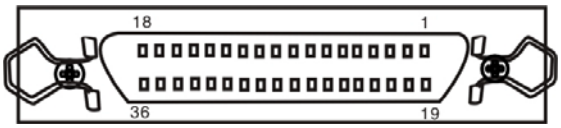


Figure A-1 Parallel interface connector pin number

A.2.2 USB Interface

The following table provides the standardized contact terminating assignments by number and color for Series “A” and Series “B” connectors of Full-speed USB 2.0.

Contact Number	Signal Name	Color
1	VBUS	Red
2	D-	White
3	D+	Green
4	GND	Black

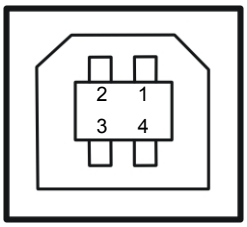


Figure A-2 USB-B type connector

A.2.3 Serial Interface

The serial interface has the following characteristics:

Baudrate (bps)： 1200 bps,2400 bps,4800 bps 9600 bps,19200 bps (selectable)

Word length： 7 or 8-bit (selectable)

Start bit： 1 bit

Parity bit： Odd, even, or none (selectable)

Stop bit： 1 bit

Handshaking： DTR protocol, X-ON/X-OFF protocol (selectable)

Serial pin assignments

The following table lists the serial connector pin assignments and describes their respective interface signals.

Pin No.	Signal	Direction	Description
1	Frame Ground (FG)	—	Printer's chassis ground
2	Transmitted Data (TXD/SD)	Out	Printer has transmitted serial data
3	Received Data (RXD/RD)	In	Printer has received serial data
7	Signal Ground (SG)	—	Return path for data control signals
20	Data Terminal Ready (DTR)	Out	Positive when the printer is ready to receive data, and negative when the printer is not ready

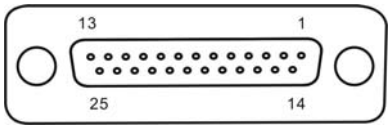


Figure A-3 Serial interface connector pin number

A.2.4 Ethernet Interface

10/100Base-T Ethernet interface can connect to 10/100M Ethernet.

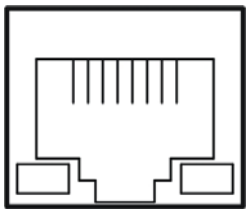


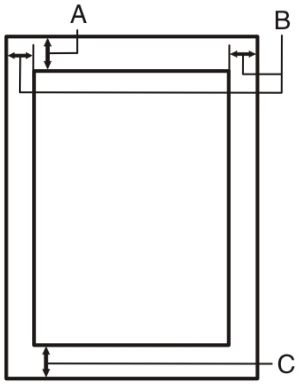
Figure A-4 Ethernet interface

A.3 Printable Area

Note: 1. To assure the print quality, please make sure the print contents are within the printable area.

2. If the print contents exceed the printable area, the print head may be damaged.

Cut Sheets



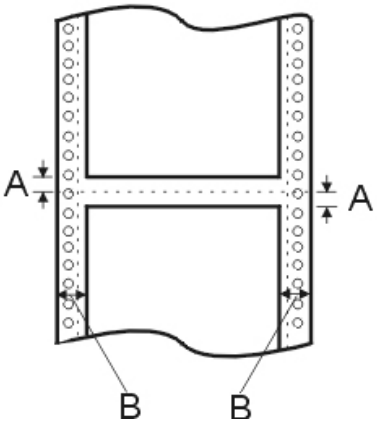
A: The minimum top margin ⩾ 8.0 mm.

B: The minimum right/left margin is 3.0 mm.

However, the maximum printable width is 203.2 mm (8.0 inches).

C: The minimum bottom margin ⩾ 9.0 mm (0.35 inch).

Tractor paper



A: The minimum top and bottom margin above and below the perforation are≥ 8.0mm.

B: The minimum left and right margins are≥ 13.0 mm.

The maximum printable width is 203.2 mm (8.0 inches).

Appendix B Command Summary

This printer supports EPSON ESC/P-K2 control commands shown as the follow table:

Classify	No	Command	Description
Printer control commands	1	ESC @	Initialize Printer
	2	CAN	Cancel Line
	3	DC1	Select Printer
	4	DC3	Deselect Printer
	5	DEL	Delete Character
	6	ESC #	Cancel MSB Control Sequence
	7	ESC >	Set MSB to 1
	8	ESC =	Reset MSB to 0
	9	BEL	Beeper
	10	BS	Backspace
	11	ESC U	Select Print Direction
	12	ESC <	Select character Unidirectional Mode (on one line)
	13	ESC s n	Select/Cancel Quiet Print Mode
	14	CR	Carriage Return
	15	LF	Line Feed
	16	FF	Form Feed
	17	ESC $	Set Absolute Horizontal print position
	18	ESC \	Set Relative Horizontal print position
	19	ESC (U	Define Unit
	20	ESC (V	Set Absolute Vertical Print Position
	21	ESC (v	Set Relative Vertical Print Position
	22	ESC J	n/180” Line Feed
	23	ESC j	n/180” Reverse Line Feed
	24	HT	Horizontal Tab
	25	VT	Vertical Tab
Image and color handling	26	ESC ? m n	Reassign Graphics Mode
	27	ESC *	Set Graphics Mode
	28	ESC (G	Select Graphics Mode
	29	ESC .	Print Raster Graphics
	30	ESC K	8 dot Single-Density Graphics Mode
	31	ESC L	8 dot Double-Density Graphics Mode
	32	ESC Y	8 dot High-speed, Double-Density Graphics Mode
	33	ESC Z	8 dot Quadruple-Density Graphics Mode
	34	FS &	Set Chinese character mode
	35	FS ·	Cancel Chinese character mode
	36	FS SO	Select Double Width Mode (Chinese)

Chinese character print command	37	FS DC4	Cancel Double Width Mode (Chinese)
	38	FS W	Select/Cancel quadruple-size mode for Chinese character
	39	FS J	Select lengthways printing
	40	FS K	Select transverse printing
	41	FS D	Two character lengthways half-size mode paratactically printing
	42	FS -	Select/Cancel Underline Mode for Chinese character
	43	FS S	Select full-size mode pitch for Chinese character
	44	FS T	Select half-size mode pitch for Chinese character
	45	FS U	Select half-size mode pitch adjustment for character
	46	FS V	Cancel half-size mode pitch adjustment for character
	47	FS x	Select /Cancel high speed printing
	48	FS 2	Chinese character of user-defined
	49	FS SI	Select half-size mode for Chinese character
	50	FS DC2	Cancel half-size mode for Chinese character
	51	FS r	Select demisemi-size mode for Chinese character
	52	FS !	Select Chinese character print mode
	53	FS v	Select/Cancel form connect line
	54	FS k	Select Chinese font
	55	FS Y	Select Chinese character dot-matrix and width
	56	FS c	Set Chinese character HMI (Horizontal motion space)
	57	FS b	Set Chinese character datum line
	58	ESC I	Select Chinese CC-DOS print mode
ASCⅡ Character	59	ESC k	Select Font Style
	60	ESC X	Select ASCⅡ character width and height
	61	ESC P	Select 10CPI Mode
	62	ESC M	Select 12CPI Mode
	63	ESC g	Select 15CPI Mode
	64	ESC p	Select/Cancel Proportional Mode
	65	ESC x	Select Print Quality
	66	ESC 4	Select Italic Mode
	67	ESC 5	Cancel Italic Mode
	68	ESC E	Select Emphasized Mode
	69	ESC F	Cancel Emphasized Mode
	70	ESC ! n	Select Print Mode
	71	ESC q n	Select Character Style
	72	ESC t n	Select Character Table
	73	ESC (t	Assign Character Table
	74	ESC R	Select International Character Set

	75	ESC &	Define Downloaded Characters
	76	ESC :	Copy ROM Characters Set into RAM
	77	ESC % n	Select/Deselect User-Defined Set
	78	ESC 6	Enable Character Set 2
	79	ESC 7	Cancel command ESC 6
Font enhancement	80	SI	Select Compressed Mode
	81	DC2	Cancel Compressed Mode
	82	SO	Select Double Width Mode
	83	DC4	Cancel Double Width Mode
	84	ESC W n	Select/Cancel Double Width Mode
	85	ESC w n	Select/Cancel Double height Mode
	86	ESC G	Select Double Strike Mode
	87	ESC H	Cancel Double Strike Mode
	88	ESC - n	Select/Cancel Underline Mode
	89	ESC (-	Define and Apply a Style of Scoring
	90	ESC (^	Print Data as Characters
	91	ESC S n	Select Superscript/Subscript Mode
	92	ESC T	Cancel Superscript/Subscript Mode
Format control	93	ESC C	Set Form Length in Lines
	94	ESC C NUL	Set Form Length in Inches
	95	ESC (C	Set Form Length in Defined Unit
	96	ESC (c	Define Form Format
	97	ESC N n	Select Skip-Over-Perforation
	98	ESC O	Cancel Skip-Over-Perforation
	99	ESC l	Set Left Margin
	100	ESC Q	Set right Margin
	101	ESC D	Set Horizontal Tab Positions
	102	ESC B	Set Vertical Tab Positions
	103	ESC /	Select a VFU Channel
	104	ESC b	Select VFU Positions
	105	ESC 0	Select 1/8-inch Line Spacing
	106	ESC 2	Select 1/6-inch Line Spacing
	107	ESC 3	Select n/180-inch Line Spacing
	108	ESC A	Select n/60-inch Line Spacing
	109	ESC +	Select n/360-inch Line Spacing
	110	ESC SP	Set Character Space
	111	ESC a n	Select Justification Mode

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